



Acting chief of NEB

A STAFF member of the National Enterprise Board with a background in physics is taking over management of the Board for the time being, while Sir Keith Joseph seeks replacements for the six members who recently resigned. The new acting chief executive is the Board's secretary, Brian Whitton, thought to be a suitable leader for the NEB's future role which should be mainly directed towards promoting high technology.

Software pirates

SALES of cassette based software are down 50% on last year, according to Julian Allinson, publisher of the independent Pet magazine, Priton. Allinson claims that for every program legitimately sold, more than two are pirated. He points an accusing finger at schools and computer clubs.

Joint venture

WITHIN the next month a joint venture will be announced between the US company Shared Medical Systems and BOC Data-solve, to launch a hospital administration system called Action. This follows the UK launch, last week, of the Patient Care Information System (PCIS) by BOC Data-solve. The companies' systems will be similar in that they provide hospitals with a package to cover admission, treatment, and patient discharge (or transfer), of patients and their records.

IBM 3081

ONCE is understandable. Twice unfortunate. But three times is downright careless. To paraphrase Lady Bracknell and with a nod in the direction of Portsmouth, it should be clearly understood that the latest IBM machine is the 3081. Not the 3801 as in some references over the last three issues of CW. Apologies.

Datsaaba all set for takeover

NEGOTIATIONS are likely to be completed this week for the takeover of Swedish computer and terminal manufacturer Datsaaba by telecommunications company L. M. Ericsson.

Datsaaba is currently owned half-and-half by Saab-Scania and the Swedish government, and the takeover is thought to have been initiated by Ericsson's former chairman Björn Lundvall, who died in a car crash in September.

Discussions on possible takeovers have been held with many companies including ICL, but the Swedish government was keen to keep ownership of Datsaaba in Sweden, if that coincided with the best interests of the company itself.

Datsaaba's chairman Hans Werth has taken over as acting chairman of L. M. Ericsson as well, and is expected to be confirmed in that post at the next annual meeting of the company in the summer.

Because of its programme of product development, Datsaaba has been making a loss since it was established as an independent company in 1977, but this has been reducing on schedule for breaking even by 1982. Datsaaba's share capital is £35 million, while its turnover last year was £88 million and is expected to reach £112 million for the current year with a loss of £13 million.

Set up as a division of Saab-Scania about 20 years ago to provide the computing power for its aerospace activities, Datsaaba has become less relevant to its parent, while Ericsson feels it will complement its recently established information systems division.

Ericsson aims to invest some of its £250 million cash pile in further acquisitions from the computer industry, either at home or abroad, and is particularly looking for software companies experienced in data communications. It bought one such company in Sweden, AU Systems, three months ago.

A spokesman pointed out that ICL and Philips are active both in the office equipment and telecommunications markets, while Philips is Datsaaba's biggest rival for banking terminals.

Computer and military electronics group Intertechnique, which called off talks to acquire Logabax a few weeks ago, has now agreed to pay £11 million in 1982 for a 65% controlling share in the firm, provided its 1981 balance sheet shows a return to health. Logabax is currently controlled by Electrolab of Belgium which is anxious to dispose of its majority interest.

But the cuts in Logabax's 2,000-strong workforce, which are seen as the main cure for the company's problems, could easily be thwarted by the French government's reluctance to approve dismissals at the moment. The presidential election is only five months away.

Increasing its holding in Logabax for the time being to 90%, Electrolab is adding £8 million to £16 million already handed over to keep the ailing computer firm in business. Electrolab will pump in another £2½ million in the spring.

Three other sources of cash each contributing about £2½ million now are the French nationalised banks, the government investment body CIASI, and the group formed by Intertechnique, Marcel Dassault and Société Générale earlier this year to take control of Logabax. CIASI and the nationalised banks will each add another £2½ million in the spring.

The first Sunday Times/Commodore Young Computer Brain of the Year, 16-year-old Roger Hughes of Llandrindod Wells, was presented with his prize, a 32K Pet computer, printer and floppy disc drive, earlier this week at Imperial College, London.

His project, which won first prize in the 15-18 age group, was a microcomputer-based system for monitoring the sugar content of the blood of diabetics, and analysing the amount of insulin required by the body. Roger is himself a diabetic.

Winner of the under-15 category was Rebecca Smith, 14, who confessed she had had no experience of computing before entering the competition. Her project involved using a computer system to match blind people with suitable guide dogs.

About £4,000 worth of Commodore Pets and programmable calculators were presented by Frank Hooper, president of the British Computer Society.

Logabax rescue bid

MOUNTING financial problems at Logabax, first signalled when the firm reported a loss for 1979, have climaxed in a £24 million rescue operation to save the French small systems and peripherals manufacturer from liquidation.

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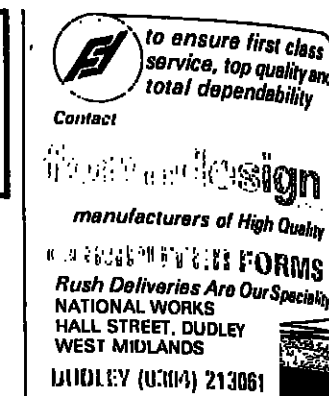
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MP slates Telecoms Bill

LACK of definite commitments in the British Telecommunications Bill drew contrasting attacks from Parliament and within the industry last week.

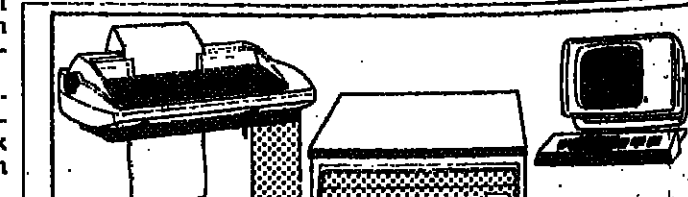
Opposition industry spokesman John Silkin said the Bill gave the Secretary of State almost dictatorial powers. Sir Keith Joseph would agonise for long periods over the use of those powers, Silkin added, before coming to wrong decisions which he would realise were wrong only 20 years after everyone else had.

All the important matters were left out of the Bill, which relied on guidelines, memoranda and enabling powers, said Silkin, adding that it was a piece of 19th century doctrinaire private enterprise philosophy.

Meanwhile, the industry the government aims to help fears that little change will be made to British Telecom's monopoly. Paul Carter, sales director of General DataComm's UK subsidiary, said: "It would be better if the government had bitten the bullet and said British Telecom will provide the network, but have no say over what is transmitted over it."

John Gurn, Tory backbencher and chairman of the newly-formed Telecommunications Council, said the Bill would give British Telecom a monopoly over forms of communication not yet realised, which was no kind of liberalisation.

The Bill was given a second reading by a government majority of 69.



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SHELL AND BP REJECT INVITATION TO INVEST MORE IN COMPUTER INDUSTRY

Govt seeks oil cash for ICL

by Kevin Cahill

THE government has initiated talks aimed at attracting oil company funds into the British computer industry. A team led by Sir Peter Carey, permanent secretary at the Department of Industry, is including Roy Atkinson, under-secretary at the DoI's Information Technology Division, has approached Shell and BP with the request that they consider substantial investment in the industry.

Both the oil companies and the DoI deny that the request was on ICL's behalf but it is clear that ICL was at the centre of the talks. Shell has so far rejected the DoI approach saying that their funds were dedicated to the search for energy and that as a matter of

policy the company did not get involved in areas in which it has no experience or expertise.

BP, which already has a major stake in the industry in the form of Sclon, is also understood to have rejected the government's approach. This is partly because a share in ICL would not fit into BP's diversification plans and partly because BP would not have the management expertise which it is felt ICL needs.

Money is understood not to have been a reason for rejecting the overtures, but ICL's need for further funds following the profit fall reported for last year may become acute over the next year or two.

With business all but stagnant according to the report released with the 1979/1980 figures, ICL is unlikely to have much success if it

ICL IN THE NEWS...

Move into retail outlets Back page
City reaction to results page 2
Redundancy talks page 2
Telecomputing suit page 2

Order growth halts

WITH pre-tax profits slashed by nearly 50% ICL has blamed the recession, falling margins, inflation and the big increase in the value of the pound for its disappointing performance in the 1980 financial year which ended on September 30.

Order growth has stopped and ICL's profitability is described by chairman Philip Chappell as "cloudy and uncertain" at present.

Notable features of the 1980 figures include a pre-tax profit nose-dive from £20.5 million in the first half of the year to a mere £4.6

million in the second and zero turnover growth in the other countries of the EEC.

ICL made an overall loss on overseas operations in 1980 and Chappell cited as a major contributory factor the speed of change in "the real, effective exchange rate" which takes inflation as well as the value of the pound into account.

Chappell also blamed falling margins abroad, commenting, "It is now difficult to charge prices on book overseas."

ICL's African business, biggest by far in South Africa, produced

the only substantial turnover increase, from £50 million to £75 million, while the US saw a 50% drop to a 1980 turnover figure of just over £10 million.

While refusing to comment on any cutbacks in the US sales operations, Chappell admitted that the US market was "bloody difficult."

The 15% increase in ICL's total turnover in 1980 to £716 million was due almost entirely to UK turnover jumping from £329 million to £404 million.

● Turn to page 2

Burroughs' \$125m write-offs

FORESHADOWED by the redundancy plans for its Cumbernauld (Scotland) factory, a series of write-offs costing up to \$125 million are to be borne by Burroughs in its worldwide financial results for 1980. They will slash the company's 1980 net profits by nearly half.

Announced by former US Treasury Secretary Michael Blumenthal, who took over as the chief executive of Burroughs in September 1980, the write-offs are the result of a series of im-

pending plant closures and consolidations, the phasing out of adding machine and calculator products, and the discontinuation of the Burroughs Scientific Processor.

Financial troubles at Burroughs first became apparent in the summer when the company reported a 12% drop in its second quarter net profits, the first quarterly decline in profitability since 1963. Things got even worse in the third quarter when profits fell nearly 32% to \$42.2 million.

Blumenthal joined Burroughs in early 1980 as vice-chairman, and before being appointed chief executive he conducted an exhaustive review of the company's operations all over the world.

Burroughs plans for 355 redundancies at Cumbernauld have been strongly opposed by the local Labour MP Norman Hogg (East Dumbartonshire).

Burroughs is getting rid of nearly 500 workers at three plants in the Detroit area, among other lay-offs.

CA buys Improve range

THE Improve product range for IBM users and 15 sales and development staff at CPP UK are being acquired by Computer Associates following GAP-CPP's decision to sell off its troubled division (CW, December 11).

CA will market Improve software all over the world, including the US where only one customer has been picked up since mid-1980 by Inso Products Inc (CW, November 27). 15% agreement with CPP was due to expire at the end of December 1980.

CA's UK director, Harry Gordon, was not prepared to comment on any price paid to CA for the acquisition but said that the 15

CPP staff would almost certainly be moved from Richmond, Surrey, to CA's offices at Maidenhead.

Gordon pointed out that the five Improve products would complement CA's existing product line quite well. A good example was the Improve system, Dataspace, which handles OS disc file management and neatly complements CA's tape file management system, CA Dymat/OS.

Founded in Switzerland, CA is now US owned, the original Geneva-based parent having been taken over by the US adapting Transamerica Computer Associates.



Lord Soames, Lord President of the Council (left) talking with Philip Chappell, chairman of ICL, after the announcement that a contract had been signed by the Civil Service Department and ICL for the computerisation of the Inland Revenue's PAYE income tax system. This is the largest single contract ever received by ICL.

PAYE contract signed

by Keith Jones

ON December 22, only nine days before the end of the government's single tender policy, ICL secured its grip on the multi-million pound PAYE contract with the signing of a contract by Civil Service chief Lord Soames.

The order for 47 ICL 2966 mainframes to be installed at 12 regional centres all over the UK. The first machine will be installed early in 1982 at the PAYE system development centre at Telford in the West Midlands. The first group of districts will go live some time in 1984.

As expected, each 2966 will handle up to 500 terminals and there will be online local communication between them. But the links between regions will be offline, at least in the early years of operation. Systems software, already closely assessed by the Inland Revenue at trials at West Midlands Gas, will include IDMSX and TPMS.

Reports that the Civil Service Department had threatened ICL with not signing the contract before the end of the year unless ICL lopped £10 million off the price, have been denied by the Department. According to ICL the order is worth "between £40 and £50 million".

Cary quits

FRANK CARY, chairman of IBM, has relinquished his position as chief executive officer, retiring from the day-to-day running of the company after more than 35 years with it. Cary will be succeeded by IBM president John Opel, chief executive officer on January 1.

● Turn to page 2

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UK study group on Ada

UNDERLINING the long-term significance of Ada as a universal real time programming language, the Department of Industry is funding a seven-month study to define the Ada environment, including a compiler and program development tools.

One important aim is to avoid UK dependence on Ada systems design work overseas.

The 10-man project group will have representatives from Systems Designers, Software Sciences, SPL and ICL, including the latter's Datsaaba subsidiary. Their work will be monitored by the Ministry of Defence which is expected to place software development contracts when the study is complete. Ada will place Coral at the standard US Department of Defence real time language.

The project will be divided into two teams, one concentrating on the compiler and the other on the rest of the Ada environment. The latter team will be led by Dr. Vic Stenning of Systems Designers, who was one of the two authors of the DoD document that defined the Ada environment.

The US Air Force is currently procuring three competitive Ada environment designs, while the West German Defence Ministry is already funding Ada compiler design work. In addition, the BEC is planning a project similar to the work here.

Overall director of the UK project is John Barnes of SPL who has been closely involved with Ada design for several years. It will be managed by Dr. Roger Gilbert of Systems Designers.

There will also be a review committee with representatives from universities, research bodies, the Computing Services Association, British Telecom and Plessey.

Small volumes will be £80-£70 per device (RF600-700).

Later on, Siemens plans to reduce prices making the device more competitive with other spreading hybrid amplifiers. For quantities of 10,000, each device will cost around £15.

Integrated circuit 'first'

From front page

20MHz and plans to move into the area of amplifiers for instrumentation. Other devices are expected to follow, depending on market demand.

From April next year, Siemens aims to produce COY 21e in thousands.

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Brandon Gamster 01-661 3124Advertisement Manager
Harry Hutson 01-661 3101
01-661 3102Class Ad Manager
Brian Durrant 01-661 3108Publishing Director
Dr J. A. G. ThomasEditorial Director
Chris HipwellIPC Electrical Electronics Press Ltd.
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Telex: 94000000Branch Offices
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EDITORIAL

The following editorial staff can
be contacted on 01-661 3500,
with the extensions shown:Keith Jones 3536
Rory Johnston 3534
Kevin Cahill 3539
Claire Gooding 3541
Ellen Stainer 3540
Bernard Allen 3537
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Doreen Smith
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Kevin McDermott
Gillian JohnsonManchester
Owen Kelly 061-872 8861Birmingham
Vic Sheratt 021-356 4838

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COMPUTERVIEW

IN a year which ends with the worst unemployment figures since the Hungry Thirties, Computer Weekly readers should be thankful that their industry has suffered only a slowdown in its meteoric growth - and not a collapse.

The manufacturing side of the business may have seen some big cuts, notably closure of the ICL plant at Winsford. And, more disturbingly, there is a small army of workless graduates who might have been acquiring valuable skills at ICL and CAP had they not received marching orders before their industrial careers reached the launch-pad. These apart, most computer professionals with experience, repeat experience, were still much in demand.

A few heavily-publicised systems house failures may have given the impression that the service industry was about to follow the lead of British Steel into the mire of massive redundancy.

A closer examination of the companies going under suggested that factors other than the economic situation had contributed to their problems - like inadequate management, for example.

Nevertheless, the classic argument that companies invest in computers during a recession to improve their efficiency has been shown as fallacious. In good times, even the least competent systems suppliers have often

A slowdown rather
than a collapse

managed to survive. Now the unofficial government policy of letting the weak go to the wall is taking effect.

Those who doubt that business is bad, at least by computer industry standards, should consider ICL's depressing financial results for the year ended September 30, 1980. Profits plummeted from more than £20 million in the first half of the year to a mere £4 million in the second.

ICL has admitted that orders have now levelled off. All of this indicates that ICL's position became progressively worse as the year went by. The company was hit very hard by inflation, high interest rates, and worst of all by the exceptionally rapid change in the cost of UK products abroad.

Had the Inland Revenue PAYE contract, one of two anti-inflationary cliffhangers dominating the news in 1980, not been awarded to ICL under the now (January 1) defunct single tender policy, this would have been the company's blackest year ever.

As it was, the year turned out to be the

worst since 1972 when the company made only £3.3 million from £150 million sales. In pure money terms, the PAYE contract is worth about £40 million over several years and is not going to improve ICL's financial position dramatically; at least, its world computer market credibility is no less now than it was when the year began.

For those who had not guessed already, the other cliffhanger was the long wait for the IBM H-series. When the first member was launched as the 3081 in November, only a novel and rather exotic cooling technique and using the rather pretentious term "dyadic" to describe two very tightly-coupled processors hid the fact that the machine was most definitely revolutionary rather than evolutionary.

The TTL componentry provided more logic gates per chip but nothing spectacular compared with the Hitachi M-200H for example. Most significantly of all, no big changes were made in the systems software supported by the machine.

It offered merely a lot more power for slightly more money and IBM users may thank Hitachi, Amdahl and its Japanese sidekick, Fujitsu, for these developments. Fujitsu can also be blamed, if "blamed" is the right word, for putting paid to Storage Technology's plans to take over Amdahl and complete head-on with IBM more or less across the board at the top end of the industry giant's market.

While not interfering directly in merger talks between the two firms Fujitsu, which owns 27% of Amdahl, turned Storage off the idea of a merger at the last minute by asking Amdahl for confirmation of its long-term components supply contract.

Using this method, Fujitsu thwarted Storage ambitions to become Amdahl's main semiconductor supplier. Storage retained its continuing willingness to get into the IBM compatible business later in the year by announcing plans to launch a family of machines in 1983.

Meanwhile the EEC Commission made known its ambitions for European manufacturers to produce sub-micro microelectronics by 1985 and underlined the importance of key process plant being available from EEC manufacturers. Also, national interest look like keeping Europe permanently behind the US and Japan in the chip development race.

There's a sobering thought for 1981.

LETTERS to the EDITOR

Simplifying the
family tree

MAY I suggest to your correspondent Richard Blatch, and any others with a similar interest, that he effectively rotates his family tree through 90 degrees, ie instead of:-

Arthur BLACK + Brenda WHITE
Charles + Fiona GREEN Diana + George JONES Edward + Harriett SMITH
Ian James + Kathleen Jones Leonard JONES Murray Nancy Oliver
etche reforms it:
BLACK
Arthur
b. 17/10/1950 d. 12/11/1981
m. (1773) Brenda WHITE
1. Charles
2. Diana
3. Edward
4. George JONES
5. Harriett SMITH
6. Ian James
7. Kathleen Jones
8. Leonard JONES
9. Murray
10. Nancy
11. Oliver
etcThis simplifies print-out on a line printer (say three generations per page width) instead of a graph-plotter and should ease the coding problem considerably. This method of presentation is used by my brother, Mr F. G. St. C. Strange of Haslewood, Canterbury, and I have our family tree over 10 generations (from 1673) typed on 14 sheets of foolcap with over 450 names on it.
J. H. St. C. STRANGE
Belling Village, London, W5.

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What's the
professor
driving at?

I HAVE now read Donald Mlch's article (CW, December 11) several times; I still have no idea what he's driving at. There are a couple of sentences which fascinate me, however: "Once we leave the cooked-up classroom problems for the real world the matter stands differently. If some physicist disagrees let him write a program to control a robot money-pusher". Are we to suppose from that that the real world is adequately represented by robot money-pusher?

I'm not quite sure why the whole of physics should be so roundly condemned because of its failure to enlighten a monkey on how to cut a bunch of bananas from a string. Poor old Euclid, he catches it in the neck, too, but even Euclid never dissected an apple! With this sort of malapropos going on it's no wonder we are referred to McCarthy and Hayes for such terms as "heuristic" and "epistemological".
CONFUSED
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commenting on
subjects published in Computer
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data transmission

I REFER to your article (CW, November 27) entitled 'Ten Firms Enter PoS Market'. The article is in effect a review of the publication recently issued by us, Guide to Retail Capture Systems. By and large the information you give about the Guide is accurate; however, I was distressed to note that the information in the penultimate paragraph is inaccurate and in fact suggests the precise opposite of the truth. The paragraph quotes the Guide as saying that portable data entry terminals may be used as low-cost

substitutes for PoS terminals, but that they have no data transmission facility. In fact what the Guide says is that PDETs are ideally suited to carry out a data transmission function for retailers but because they have limited facilities in other directions, are not recommended as substitutes for PoS terminals except in certain circumstances.

Dr G. T. JONES
Retail Management Development Programme,
5/6 East Street,
Brighton BN1 1HA.ICL pre-tax profits
slashed by half

From front page

This increase was achieved despite the bad second half, a big shift from outright sales to sales to leasing companies and according to ICL, no significant increase in selling prices. Chappell said that ICL policy in 1980 had been growth at the expense of profitability.

Referring, albeit indirectly, to the 2,500 redundancies announced by the company in November, Chappell said that ICL costs were being reduced significantly but that profitability was bound to suffer for some time ahead because of the time needed to make cuts. One group not suffering noticeably from ICL's profit slump are the company's shareholders who will receive the same 2.975p per share dividend as in the previous year.

ICL's justification is that its dividend policy should "broadly reflect the longer-term strength of the business and its future prospects". In contrast unions at ICL are to tighten up on overtime and use of contract staff as the company goes ahead with its manufacturing and marketing staff reductions.

The unions have told ICL that they expect the company to comply with the security of employment agreement drawn up between the two sides in 1977 and reminded their members about contract staff and overtime clauses.

This follows a meeting between the two sides in which ICL presented the unions - ASTMS, APEX, AURW/TASS, BSSA and ACTSS - with a 'detailed analysis' of

Delays help
TPS firm

Attempts to cash in on delays to ICL's teleprocessing software, Oxford-based Telecomputing last week placed ads in the Guardian and Daily Telegraph for its TPS monitor, saying that it made ICL's M829 the best and TP computer currently available.

Telecomputing has a £16 million suit pending against ICL, for allegedly renegeing on a contract to sell TP, while ICL is suffering delays to the alternative it has chosen from other sources.

The TPS enhancements were announced at a conference in October and the latest version of the monitor, TP3, is designed to do conversion of DME and TME programs to run under VME in addition to the M829.

TPS-accom, an enhancement which will be available in January, is designed to aid searches and calculations on data held in files.

Telecomputing chairman Raynard Pantou has reacted to the news of ICL's disastrous stock market performance by suggesting that ICL would do better to go to the hardware suppliers rather than trying to be a single supplier of total systems.

Honeywell
triples
mini power

UP to three times the power of the existing Honeywell Level 6 minicomputer series at prices only marginally greater. This is what Honeywell now offers in the form of the DPS 6 family which reaffirms the company's substantial commitment to the minicomputer market.

Other important features of the 10-member DPS 6 family are two 32-bit machines at the top end that compete directly with the Digital Equipment VAX-11/780, and the capacity of four of the 16-bit members to be field upgraded to 32-bit processors.

According to Honeywell there are no major architectural differences between DPS 6 and Level 6 because the older series was designed originally to accommodate a 32-bit structure. To take advantage of the performance of the new machines Honeywell has unveiled an updated version of its GCOS 6 Mod 400 operating system with improved memory usage and file handling. But the DPS 6 machines will still be able to run Level 6 applications programs without modification.

Stephen Jerritts, president of Honeywell Information Systems, has given assurances that the company would continue to provide system enhancements for Level 6 machines.

DPS 6 has not been officially introduced yet in the UK and Honeywell was unable to quote a launch date. Like Level 6, DPS 6 machines could be built at Honeywell's plant at Newhouse, near Glasgow.

The four bottom end machines in the DPS 6 line are the 6/30, 6/32, 6/34 and 6/38 with configurations ranging from 128K bytes and 10 megabytes on disc on the 6/30 to 768K bytes and 80 megabytes on the 6/38. The latter can support up to 24 communications lines compared with a maximum of eight on the three smaller machines.

The four mid-range systems are the 6/48, 6/54, 6/74 and 6/76 and all, apart from the 6/48, feature a slave CPU called the Commercial Instruction Processor which handles Cobol and RPG generated programs. There is also an optional Scientific Instruction Processor for executing Fortran or Basic programs. All four machines can be upgraded to a 32-bit computer by activating a 32-bit wide pipeline incorporated in the Megabus.

The two machines offering 32-bit processing as standard are the DPS 6/92 and the 6/96 which respectively support up to 64 and 112 I/O lines and up to two and three megabytes of disc storage.

Econet can be implemented for between £50 and £60 per node on top of the cost of the micros, which in the case of the Acorn

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Two word
processing
systems

ANNOUNCED by Honeywell with the DPS 6 family are two word processing systems for multi-terminal users called Administrative System 4 and 16 and a WP applications package called Word Processing 6.

System 4 is available on the two smallest members of the DPS 6 family, the 6/30 and 6/32, and can support up to four workstations and two printers. System 16 can handle up to 16 workstations and six printers and runs on two larger machines, the DPS 6/38 and 6/48. Shared resource facilities enable documents to be transferred between locations and there is a mailbox system from which correspondence can be selected as required.

Word Processing 6 can run on Level 6 machines as well as on the new DPS 6 computers and is supported by either GCOS 6 Mod 200 or Mod 400. It enables users to interchange text or data files and create a report from different systems' files.

French bank boosts
electronic transfer with
NCR PoS equipment

MAJOR French bank Credit Agricole plans to extend its offline electronic transfer system involving NCR point-of-sale equipment at three hypermarkets and reports growing interest from other European banks.

For the past ten months Credit Agricole customers have been using bank cards, normally used at the bank's automatic teller machines and branch counter, to purchase goods at two hypermarkets in Clermont-Ferrand and Limoges, Central France.

Paperless transactions at the hypermarkets have risen by around 5% a week over that period, Jean Paul Grandy, DP manager for Credit Agricole in Limoges, commented. "Our recommendation has been that we should plan the expansion of the system with other retailers, not only supermarkets and department stores, but also smaller shops using standalone terminals."

When we started with the trial, other French banks were not interested. Now we find an increasing number are interested in joining the system, as well as other European banks."

NCR is developing a bank card reader to PoS terminal interface which would make extension of the Credit Agricole system possible.

The company spokesman said, "The hardware involved in the

microprocessor interface, isn't very spectacular - it's the application which is interesting.

"Barly next year, we should be able to link the readers to most of our point-of-sale terminals and support as many different types of card as anyone would need."

Grandy explained why the bank went for an offline rather than online EFT system. "As bankers, we must not give information on our customers' credit standing to any other user than the bank."

This system, which NCR developed in conjunction with our bank, is much easier, quicker and less expensive to install.

"The card reader, which is simply added to the retailer's existing NCR system."

Under the Credit Agricole project, standard NCR magnetic card stripe readers and a 12-key pin pad have been added to NCR 255 PoS terminals via a microprocessor interface.

After itemising and totalling the purchase, the cashier feeds the customer's card into the reader.

The local system runs a check against his account and shows the information and prints full details of the transaction if all is well.

At the end of the day, the data is transferred direct by line or physically by cassette, disc or magnetic tape, to update files on Credit Agricole's NCR and IBM mainframes.



Six Acorn Atoms and a floppy disc-based filestore are linked by Econet at Long Road Sixth Form College in Cambridge... for a total of £2,500.

THE trial system of Acorn Computers' low-cost local networking system, Econet (CW, November 20), is up and running at a school in Cambridge and the company is ready to start volume production of the system.

Acorn director Chris Curry believes that the availability of such systems will stimulate the production of so much good quality computer assisted learning programs that all existing material will be insignificant by comparison.

Econet can be implemented for between £50 and £60 per node on top of the cost of the micros, which in the case of the Acorn

From tiny
Acorns...

Atom is from £120 to £300 each. The first Econet interface boards have been developed for use with the Atom micro, but Cambridge-based Acorn plans to develop versions for other micros. The board uses Motorola's MC6854 Advanced Data Link Controller to implement the IBM SDLC protocol on the data line.

The network is based on ordinary four-wire telephone cable

with a clock signal on one pair and data on the other, running at 210Kbps, although later versions are to run at 250Kbps.

A maximum of 255 stations can be connected to one cable and a three-part operating system has been developed: to run in the central clock generator station, a file server and a printer station, as well as the driver program to run in each terminal.

Commands implemented on the system allow one station to control another, or view its screen, or Peek or Poke into its memory. Messages can also be broadcast to all stations.

First deliveries are planned for June in the UK, at a price of £4,350.

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Selling into 1981

Downtime

by Chad

Food for thought

CLEANING new information to expand our professional knowledge requires some surprising skills, doesn't it? I'm thinking of the technique of eating at conference receptions, where one needs to manipulate plate, fork, glass, and notes all with two hands (unless you happen to be a Hindu god with lots of extra limbs).

I was doing this at a reception after the Online Information conference, and having munched down to the less appetising bits of food on my plate, I put it down temporarily to give my contented fingers a rest. Up hustled a waitress, seemingly full of that all-too-common eagerness that her kind have of snatching

the food out of the mouths of customers.

Asked she, pointing to my plate, "Have you finished with this?"

I hadn't, but wishing to please as always, and considering that I didn't much care for what was left on the plate, I replied, "Yes."

She then picked up the plate, peered at it closely, and exclaimed indignantly, "But it's not finished! You haven't finished it!"

She plunked down the plate and marched off, so I didn't get a chance to discuss her theory of dietetics that lets her ask a question and then refuse to accept the answer.

Handy, isn't it?



Go to blazes!

ON the fire hose reel in our office is a sign: "Do not use hoses except in case of fire."

The mind boggles! What on earth do they imagine people would do with them? Spray them all over to live up an office party? Use them to increase the liquidity of the accounts? More likely to muffle the fire alarm when it goes off spuriously.

I understand there is a prison somewhere in which there are glass cases in the warders' offices, each containing a rifle. On every case is a sign reading: "In case of break fire this."

A Happy New Year... if you'll excuse the expression

THERE was a cartoon by Pont, published in Punch during the dark days of the Battle of Britain, in which one middle-aged lady says to another over the breakfast table, "Must you say, 'Well, we're still here,' every morning?"

I confess that seems to me the most appropriate sentiment for the New Year - "Well, we're still here."

Reflecting on the economic crisis we are in, I can't think of a time when we weren't in an economic crisis, but I suppose some crises are more equal than others.

Anyway, this is the time of the year for reviews and predictions, and as a public service I will not swamp you with any more. I will certainly not predict that some time in 1981 trade unionists will claim there will be 50 billion people put out of work by the microchip by the end of the year, nor will I forecast that Apex and

the National Graphical Association will lead a protest march to the Inmos factory in Newport where they will throw their wooden shoes in the step-and-repeat machines. Speaking of the NGA, I certainly will not suggest that Kerry Packer is thinking of buying The Times and bringing in teams of kangaroos to run the new technology printing equipment. He could hardly do that when Sir Keith Joseph has a prior call on the kangaroos to take over the NEB.

It would be irresponsible of me to lead you to think that IBM is going to introduce, later in the year, its "Z" series, an ecological, energy-saving computer that uses no electricity. Teams of unemployed people would be hired to turn cranks on the side of the machine, and the heat they produce would be an extra boon to the air-conditioning industry. I can assure you that those were

not IBM spies seen lurking around Babbage's Analytical Engine in the Science Museum, trying to steal Britain's secrets.

I will not bother to predict that during the year the Japanese will devise a chip that can hold the whole of the world's knowledge in a space the size of a fly's footprint, because doubtless someone else will. It goes without saying, of course, that a professor at an American theological seminary will write a program that calculates how many angels can dance on the head of a pin.

On the social front, I need not forecast that a crusading journalist on the New Statesman will discover that bobbies at the security services have invented a computer which translates telephone conversations into Latin elegiacs.

In all, 1981 doesn't look as if it will be much different from 1980.

GILB'S MYTHODOLOGY

The Blue Sky path to simplicity

SIMPLICITY is our dream, a point illustrated at a recent Info-tech conference in London when the lecturer spoke about measures of software complexity.

A member of the audience won spontaneous applause from other listeners by saying: "I am interested in measures of simplicity."

If you feel simplicity inclined, perhaps you can make your simplicity dreams come true.

Dare to dream about the simplest and most direct solutions to your problems. Don't give up so easily when evaluating practical and economic solutions to your dreams.

For many years I have made conscious use of the "Blue Sky" principle for system design. First, I identify my dream of the simplest and most direct solutions. I try hard to find appropriate solutions and don't give up easily.

The mere fact that clients or colleagues say: "It is impossible"

represents a personal challenge.

It is more fun to accomplish what others have said was impossible. Last month, for example, an airline told me it was impossible to divide up a 55 work-year project into smaller deliverable steps.

Common sense

Less than an hour later they agreed it could be done, and the people who had told me the task was impossible did most of the real work in identifying the solutions.

The answers were just good common sense but by using the shared dream of reducing project size and complexity, we worked until solutions began to appear. Then we bulldozed all "objections" to our ideas by finding appropriate solutions.

When you are starting on the famous Cloud Nine, you might have to give up temporarily and try Cloud Eight. Years ago, in making a publisher order-entry system, I

started on Cloud Nine.

All handwritten orders from all over the world, from bookshops, universities and private individuals, would, we dreamed, be fed directly into the computer unchanged, uncoded and without any human intervention. By the time the system was on the air, we had moved down to at least Cloud Eight.

We did have one of the world's very first publisher systems which permitted direct keying of customer names, addresses, authors and titles (product descriptions) - with all their abbreviations, variations and misspellings - into our computer.

The computer was remarkable in recognising the correct customer or product record.

Unlike all other publishers in the world, we had eliminated the need to encode a Standard Book Number before the computer could understand anything. Our system found the record for us; we didn't even need the number.

It might still surprise some readers to realise that the programming needed to perform this Cloud Nine dream was initially about 40 lines of Fortran written by a trainee.

Later, we elaborated it to several hundred lines of code in order to improve its "intelligence" (like knowing that VII and 7 were the same thing).

Codes

In another similar dream, we designed a system for a hardware wholesaler. The original designs of several suppliers stipulated a 10-digit number for all products with a check digit, of course.

The problem was that none existed and the wholesaler had been using the product codes found in catalogues of major international hardware suppliers.

Our Blue Sky dream, shared by the company president, was to avoid the problem of numbering several hundred thousand products. The exact Blue Sky dream was to use whatever they had been employing.

We settled on a design using a simple abbreviation for the supplier, VOLVO becoming Vol if it was unique, combined with the product code used by Volvo (for example PC-236-X).

The simplicity of this solution was obvious, involving no major changes in catalogues, ordering



Tom Gilb is an independent consultant, lecturer and author on computing topics.

FOCUS

At the turn of the year..

IT IS traditional at this time of the processing year to delve into the clairvoyant database of forecast and conjecture. Focus must first lean back to review the trends and entrails of the DP year past.

1980 was heralded as the year in which the micro revolution would reach overdrive top. In the event, it was more in underdrive bottom mode with the industry surviving relatively unscathed.

Certainly, micro power has reached the book and magazine racks as well as shelves of the local high street stores.

Discontent

But dispatches received from the micro front line have revealed discontented murmurs from sundry users who discovered, late in the acquisition stakes, that performance does not always match sales claims.

Similarly, 1980 has not proved to be the year of Prestel, videotex, Ceefax or Ceefax. The telephone part of the operation was more noted for substantial price increases.

The year failed to enhance the fortunes of ICL, which revealed during the period under review a stronger marketing line in graduates than machines.

After the departure of Alan Benjamin and David Firnberg from the CSA and NCC, both organisations appear to have disappeared from view along with similar oblivion for the great privacy debate.

UK computer exhibitions have also lost popularity. Compex apart, the glitter has departed together with the exhibitors and visitors.

TEN YEARS AGO

From Computer Weekly of December 31, 1970

THE Post Office announced plans for a large scale computer-based message switching network capable of dealing with 125,000 telegrams a day and invited major companies to tender. Siemens unveiled a new VME European challenge to IBM with its revamped 4004/45 system, supplemented by the 4044/135, 150 and 151, the latter three manufactured under licence from RCA. Prime Minister Edward Heath raised the computer issue in a speech to the House of Commons, saying that the Government was committed to the development of a computer bureau service to replace the ICL 1601A installation.

Conferences, seminars and workshops have all taken a dive in focus ratings. Non-chart moves include word processing, leasing companies and, bureaux operations.

DP magazines have moved to the opposite direction. Industry observers believe that possibly more installation time is now spent reading than operating.

The Computer Users' Year Book achieved record proportions, as did programmers' pay, and robots made a belated climb in the activity charts, surfacing at both Longbridge and Olympia.

Moving to the sharp end of the industry, the long awaited IBM H-series arrived finally, complete with Dyadic design and internal waterworks.

A hot line to the local plumber must be added to emergency phone listings; Amfid maintained their reputation by announcing a rival product within hours of the 3081 release.

It was a year in which Focus continued its "record" of failing to win an industry award. As compensation, Focus hopes to feature in the forthcoming publication Who's Who in Computing.

Peering into the data bowl, line cross and networks appear to form as 1981 looks like being the year of telecommunications.

Convergence will be the buzz word, whether it is British Telecom moving towards liberalisation or the user towards a totally cashless society.

EFT will rule, photons replacing electrons, fibre optics technology superseding everything else. DPMs will have to interface with the local IBM diagnostic centre as well as the next passing communication satellite.

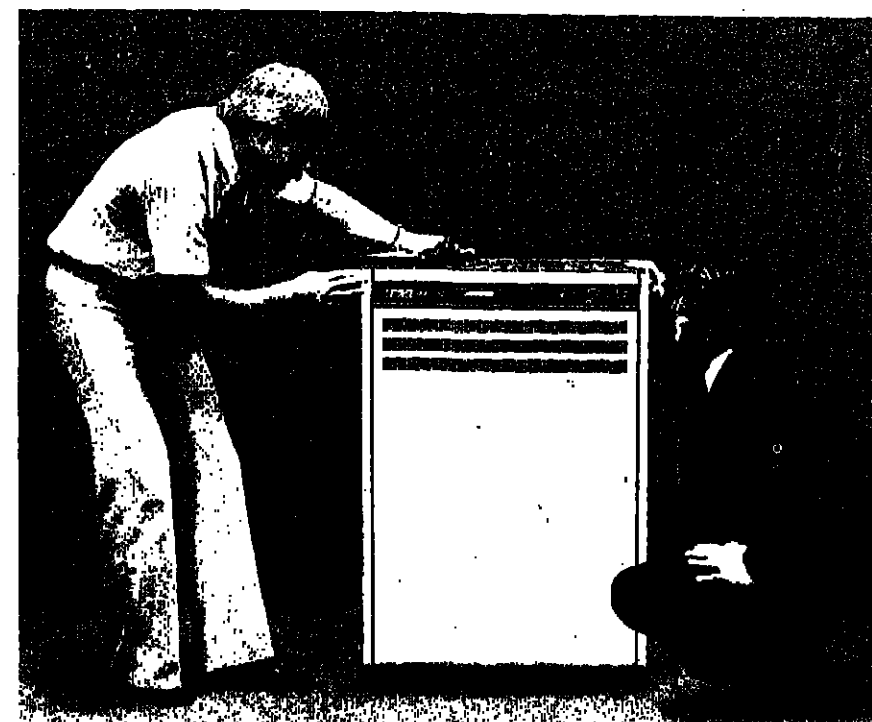
With the erosion of the PO telecom monopoly controls, declining costs and user demand for faster communications, the DP manager will also have to make close connections with the local British Telecom manager.

The coming year looks like providing even more change and uncertainty, budgets continuing to be a critical computing factor with cost performance a major consideration.

It may prove difficult to find a better slogan than the 1980 Focus Award winner: with equity for all in the ascendancy, "Equal Bytes for Women" will be an integral part of the established DP scene in years to come.

Introducing a computer too small to be a VAX, but too powerful to be anything else.

Digital's new VAX-11/750.



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The VAX-11/750, from Digital Equipment Corporation, is so much computer for so little money it will literally change the way you think about computers.

VAX family compatibility.

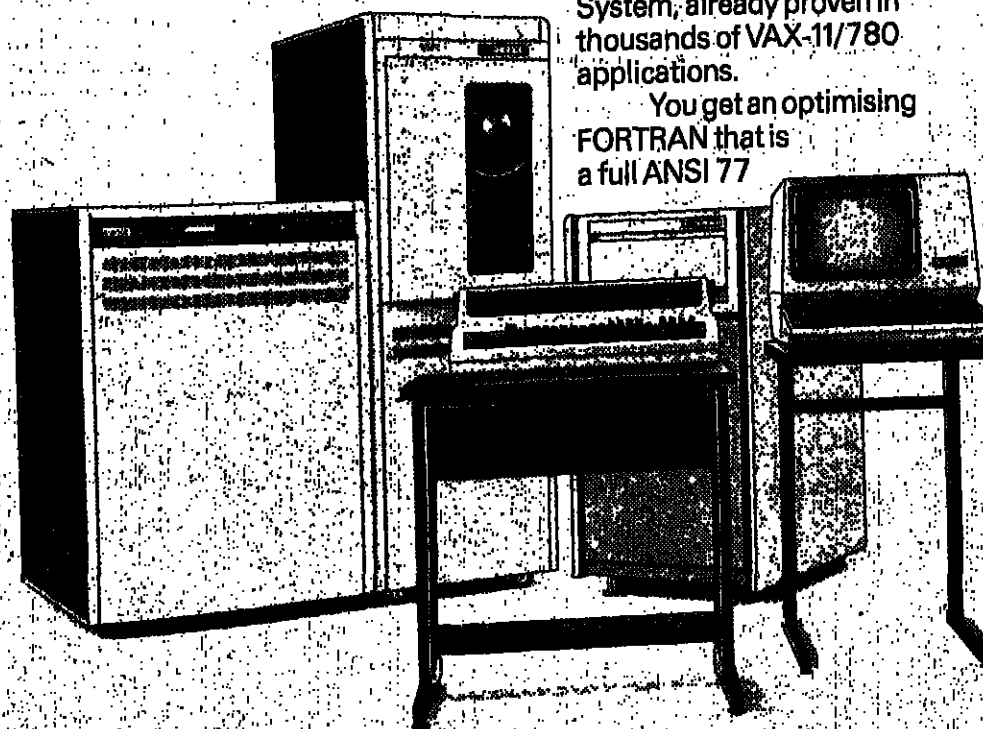
Despite its size and price, the VAX-11/750 is totally software compatible with the larger, faster VAX-11/780 - the computer that has been setting performance standards ever since its introduction.

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10/11/81

MICRO NEWS

by Eileen Stainer

Philips launches first small business system

A MARKET move to coincide with the New Year has been made by the Dutch multinational Philips, with the introduction of its first personal computer for the hobbyist and small business systems markets.

Philips Data Systems plans to launch the Z80-based P2000 in Europe next month, although it was first shown to the public in May last year. It will be available in several configurations with prices ranging from £600 (3,000 guilders) to £3,500 (17,500 guilders).

The company broke into the video games market 18 months ago (CW, July 5) with the launch of its G7000 Videopac computer which retailed at £150.

Philips considers the current value of the personal computer market to be £400 million (2,000 million guilders) a year. This figure is likely to triple by 1984

with the business and professional user becoming increasingly important, according to the results of research projects the company has carried out.

To cope with such a market, the company has decided to distribute its systems through its business equipment outlets. Philips predicts that sales will approach two million units in 1984.

At the top of the P2000 range for £3,500 the system comprises the basic microcomputer plus a printer, VDU and floppy disc drives; while for £600, the user gets a microcomputer with 4K bytes of internal ROM and 20K bytes of RAM memory, which is expandable to 52K bytes.

Software is supplied in plug-in ROM modules called ROM-keys which come in 4, 8 or 16K form. Application programs include text processing, data entry, book-keeping and graphics, which can be

used with a colour monitor. Basic and Pascal Interpreter modules are available for the user to develop his own programs, which can be stored on Philips' mini-cassettes taking 120K bytes, or on mini floppy disc drives with a capacity of 218K bytes.

The company plans to supply a number of specific applications programs through approved software houses, which will also be available to do custom work.

In the upmarket version, Philips supplies a 12-inch, 80-character monitor, a daisywheel (25 characters per second) or matrix (80 chps) printer, and dual floppy disc drives housed in the monitor module.

In the cheaper hobbyist version, the P2000 can be connected to a home television, giving a 40 character display using up to six different colours. An ordinary typewriter keyboard plus numerical keys comes with all configurations. A Viewdata interface is supplied

for information editing and storing, and this can be operated with a colour monitor. Modern and IEC bus interfaces are also provided.

MBM Ltd

IN a report headed "Builder's £25,000 program rewrite nightmare" in our issue dated December 11, 1980, we wrongly stated that Northampton-based distributors Midland Business Machines Limited (MBM) went bankrupt before it was taken over by Systime in January 1979.

MBM was in fact a successful and profitable company when it was taken over by Systime and we wish to apologise to the former directors of MBM for any embarrassment we might have caused them. The reference to MBM was incidental to the report, which was otherwise accurate.

Good outlook for processor market

THE microprocessor and single chip microcomputer market will exceed 650 million units a year by 1985, according to a report issued by Creative Strategies of San Jose, California. In 1980 the figure was 115 million units, indicating a compound annual growth rate of 42%.

Entitled "Microprocessors/Microcomputers", the report defines five major categories of the industry: microprocessor chips, microcomputer chips, microcomputer boards, microcomputer nucleus systems and microcomputer development systems.

Each section will show rapid growth over the next five years, according to the report. Total sales of microprocessor based products will increase, with a compound annual growth rate of 32% from \$1.2 billion in 1980 to \$5.5 billion in 1985.

Microprocessor chips alone will grow at a compound annual rate of 35%, from \$217 million in 1980 to \$963 million in 1985. The report classifies them into three distinct types: simple control, general purpose and data processing.

The report states, however, that microcomputer development systems will become less important in the industry. Sales will decrease as a percentage of total industry sales from 18% in 1980 to 8% in 1985. The reason for this, according to the report, is that each existing MDS will support more and more chips.

The MDS market will still grow 14% over the five years from \$218 million to \$422 million. In units this means an increase of 18%, from 16,000 to 37,000.

In terms of market divisions, the report shows the communications sector having the highest growth rate of 33% a year. The market value will increase from \$346 million in 1980 to \$1.4 billion in 1985. Business and education will grow from \$371 million to \$1.2 billion.

In terms of geographical segments, the US will lose market share over five years; now it takes 60% of world production, but this will decrease to 45%. Japan will increase from 14% in 1980 to 22% in 1985, with a compound annual growth rate of 44%.

64K RAM from Intel

FIRST quarter of this year should see volume quantities of Intel's 64K dynamic RAM which uses a redundancy design approach to improve yield. The device will have a 128 cycle refresh and will be housed in a standard 16-pin package.

The redundancy approach, also used by IBM and Western Electric in the 64K RAMs they produce for internal use, means that extra storage cells are incorporated on the

chip. Defective cells are replaced by the spare cells during the test procedure of the devices, thus improving the yield.

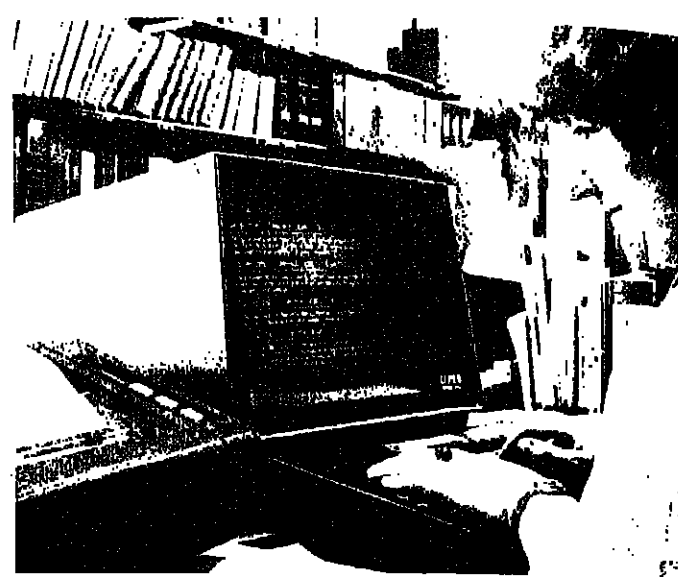
Apple II gets three months

APPLE Computer has been given another three months to bring the Apple II personal computer up to the approval of the US Federal Communications Commission. At the moment it does not comply with the Commission's technical standards.

With the Heath Corp. Apple filed a petition to the Commission, asking for an extension beyond the deadline of January 1, 1981 - already an extension on the original deadline of July 1, 1979. Both companies said that if it was not granted they would be forced to close down their plants.

The regulations were announced in November 1979 (CW, November 15, 1979), so the companies have had just over a year to make the necessary changes. The problems lie with the personal computers causing excessive radio interference.

A condition to the extension is that Apple must supply a warning label with each unit manufactured under the waiver, indicating that the equipment may interfere with radio and television reception. The user must correct the interference himself.



One of the Polis terminals in use in the House of Commons Public Information Office in Norman Shaw Buildings.

Commons online index gives backbenchers rapid access to facts

"A POSITIVE weapon" for the backbench MP in his struggles with Whitehall was how the House of Commons online index was described at its official launch by Philip Whitehead, chairman of the Commons computer sub-committee. The system, called Polis and provided on a bureau basis by Scicon (CW, April 10), is now up and running, giving MPs the "rapid access to facts" which Whitehead (Lab, Derby N) asserted was essential to MPs' work.

Since June 11,000 answers to Parliamentary questions and Ministerial statements have been loaded on to Scicon's Univac 1100 in Milton Keynes for access by Commons library staff using terminals in the Palace of Westminster and in a nearby office building.

Problems with floppy discs wearing out and the loss of a whole day's input owing to a lightning strike have been the only sizeable difficulties, and the costs have been kept well below budget.

Outside organisations will be allowed to subscribe to Polis if they are interested, using their own dial-up terminals, provided they are approved by the computer sub-committee. They will also be able to buy copies of the 9,000-term thesaurus that has been compiled.

Next year a current awareness service is to be added to Polis, providing MPs with weekly notification of items that fit their interest "profile", and outside organisations will be able to subscribe to this as well.

Whitehead described Polis as "the first step in adapting ourselves to the changes we will have to make as the information revolution sweeps over us all".

Tory MP Ian Lloyd agreed that gradual introduction of such systems was the only way to get new technology accepted in Parliament, but he added that "By the end of the decade, you won't recognise this place."

A contribution towards standardisation has been made in the adopting of the Euronet common command set for Polis' retrieval language. The Unidos retrieval software makes it particularly easy to use the thesaurus, switching back and forth between that and searches, commented Jane Wainwright, who is in charge of the project from the library end.

Government departments are interested in using the system, Whitehead remarked. Other computer applications within Parliament are being investigated, and when the current process of switching Hansard to computer typesetting is completed, the possibility of a link between that and Polis will be explored.

Other computer applications within Parliament are being investigated, and when the current process of switching Hansard to computer typesetting is completed, the possibility of a link between that and Polis will be explored.

DBMS launch

A DATABASE management system for Digital Equipment Corporation's VAX 11/780 is to be released in Europe through Turley Software of Chalfont St Giles. The DBMS, called Data Boss 32 comes from Florida Computer Inc and is written in Fortran IV.

It includes a data dictionary catalogue, an English-like Query module, multiple index keys, multiple level password protection and other facilities. Future plans include data entry and report writer options. Data Boss 32 costs £20,000, for VAX users running VMS operating system, Fortran IV and Sort 32.

Jitters in Texas over Daxko rival

REACTIONS from the Texas Instruments sales force in the UK to the news that US company Daxko is to compete with it in the British market were so strong that they throw doubt on Texas' confidence that it could sustain a broader attack on its systems market, says Daxko president Ogale "Randy" Ray.

The news that Daxko intends to fly in Texas products to Ireland, then sell them on to systems houses in Britain and Europe, came in early November. Ray says: "Texas people were running around saying 'Oh my God, we're going to be wiped out, we're going to be wiped out'. They were on the phone to Austin (TI's US headquarters in Texas) twice a day."

"They made a mountain out of a molehill."

handful of Texas systems per year. These customers will be offered deals which Texas' price list only allows for much higher volumes, he says.

"We're about the same on price as the Texas list", confirms Ray. "Our advantage is in the 10 systems a year market because of our better discounting policy. We can give substantial profit margins - in the order of 40% - to these companies."

"We will supply software to OEMs or systems houses to allow them to be up and running with a product quicker," Daxko already offers standard financial packages on Texas kit, says Ray, and is currently having a banking applications package written in Dublin. It will be ready by the first quarter of 1981.

The outskirts of Dublin is the location for a plant (not Dundalk as previously reported) which will be used to assemble components flown in from the US. Some parts - cabinets, for example - are to be manufactured locally. Ray was



RAY... "They made a mountain out of a molehill."

Confident

But Texas' UK marketing manager Dave Monk merely observes that "naturally" he was in touch with the US to check the background to Daxko's proposed activities - and specifically to make sure Daxko was not breaking its purchasing contracts with Texas. "If Daxko is adding value in significant measure then they would qualify under normal contract terms in the US", he says. "If they're planning to broker hardware and become a re-seller it is possible they wouldn't qualify", he adds, and says he remains very confident about Texas' sales.

In fact, says Ray, Daxko will be assembling in Ireland and in any case is only to compete with a very small part of Texas' UK market. It is aiming at the small OEM or systems house which takes a

Target

Monk also points out that Texas is under no obligation to maintain hardware which contains subsystems it does not make.

The Daxko president says that his sales target for the first year out of the new facility is some \$5 million, not the \$10 million which UK representative Nick Ashton had envisaged. But this is still substantially more than the \$1 million of sales to Europe in 1979.

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Breaking down the jargon barrier

"WHAT's so special about computers?" is the title of a video programme aimed at breaking down the jargon barrier and improving communication between computer staff and users. It is released by Melrose Film Productions of London.

Intended mainly for managers and supervisors of user departments, the 34-minute production shows the sort of problems that occur when users and DP people talk and yet fail to communicate with each other.

Featuring four main characters - DP manager, managing director, marketing director and head of accounts - the production follows the development of an ill-fated stock control and order processing system.

The film is unsympathetic to the non-computer people. It shows Sunderland, the DP manager, trying time and again to impress the implications of the system on the other three. But all to no avail.

The marketing director, Germain, is particularly awkward and early on he refers to Sunderland as a "kook". Daxko, however, changes his tune as he

gets the wrong impression that the system will provide him with real time information. Sunderland tells him otherwise, but Germain pays little attention.

Irwin, the managing director, is not much better. "What's so special about computers?" says Irwin. "That's what we're here for, to sort these problems out."

And so 12 months after the first meeting between the four of them, we see the firm, whose name and business are not specified, landed with a system which doesn't meet its needs, resulting in problems all round.

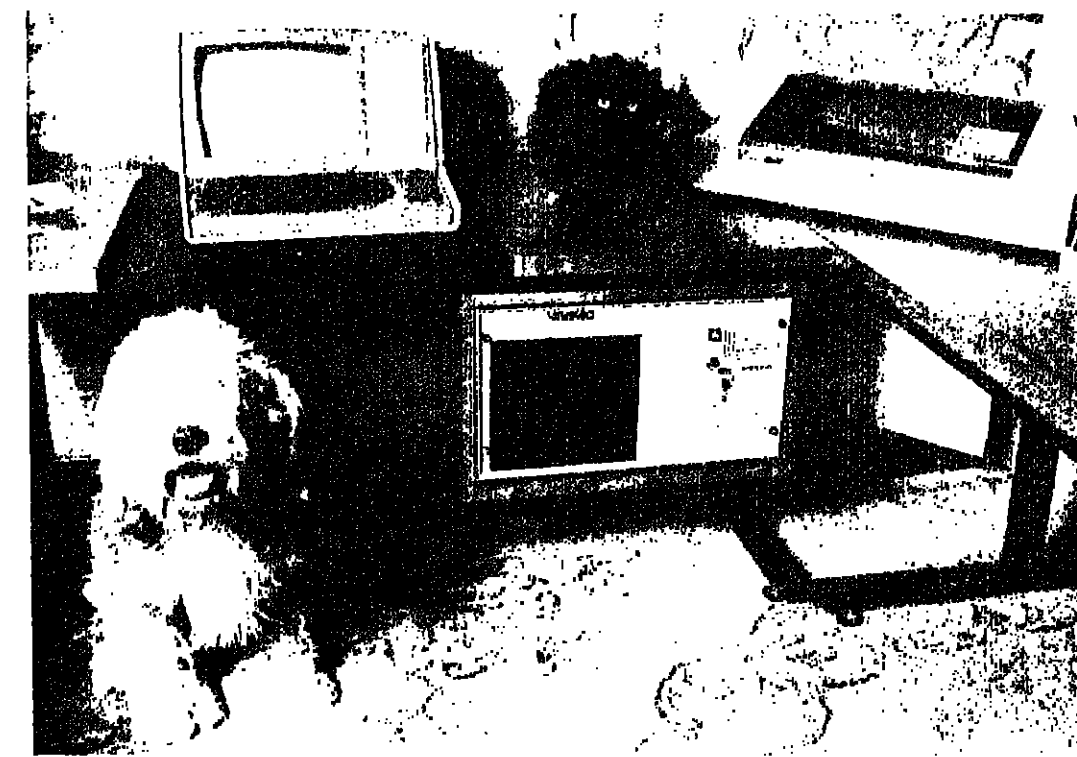
The production may be helpful to non-computer people, providing it is used, as intended, as part of a half-day course on computers. Preview are to be held all over the country, starting in London on January 13, and taking in Birmingham, Manchester, Glasgow, Leeds, Bristol and Southampton.

"What's so special about computers?" costs £425 + VAT and may be hired for £65 + VAT and £85 + VAT, for two and seven days respectively. It is available from Melrose Film Productions Ltd., 84 Lupus Street, London SW1 3EL. Tel 01-834 4584.

Costing system launched

A COSTING system aimed at first-time users in the printing industry has been launched by MAI, maker of the Basic Four range of small business computers. Called Compacprint, the system uses many of the British Printing Industries Federation's recommendations for costing and reporting, such as reporting on slow-moving jobs and other kinds of exception and keeping cumulative costs of labour and materials charged to each job.

Configurations include a single terminal system running on a Basic Four Model 200 and a Model 410-based system for up to eight terminals. It can either be a stand-alone system or can be integrated with other accounting, order entry and word processing systems.



It should happen to a vet!

WHEN Fido next goes to the vet, all his details complete with treatment, vaccinations in store, owner's name, and perhaps, alarmingly, the bill, may be entered into the practice computer. Verifac, marketed by B & I Mini-Computer Systems of Stroud, is announced as the first system to handle all the administrative details of the animal practice. In addition it will take care of the business headaches of VAT returns and purchase ledgers, and print out drug and treatment labels. Hardware consists of a VDU with keyboard, printer and micro with two disc drives. Prices start at £8,900 and include full training and tailoring of programs to practice requirements. B & I foresees the spread of Verifac to dental and doctors' surgeries.

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PROGRAMMERS' PAGE

Eleven for 1981

BY the time the average programmer becomes one, he's usually given up making New Year resolutions. But for those few souls left with natural optimism here are some suggestions for 1981:

Read through the computer papers, particularly CW. It's surprising how much you can learn.

Enthusiasm for new projects is hard to maintain and even when felt, is sometimes concealed behind a cautious manner. Worth cultivating though, both for your own benefit and the light it sheds.

Standards — come to terms with the obscure bits that bring a glaze to your eye. It may take an effort to get past the terminology especially if it's not something you often use. But you can bet your boots that when you do need it, you won't have time.

Oops — mistakes are inevitable, but they can be cut down. Don't ever rush, unless it is a real emergency.

Learn a new language. Too late for evening classes now, but there are plenty of good books around.

Understand the analyst's need to amend, when he presents you with the tenth (or more) amendment to your mutilated program. He is only passing the pressure down the line.

Test ad nauseam for every conceivable contingency. Murphy's law states that any loophole will always come up during a live run.

I and 1, O and 0, Z and 2, S and 5. Make a note (written) always to distinguish between them, always use it sharp pencil, always write clearly, legibly and large.

Ops usually have good reasons for crashing your program test

runs, even when it is only for lack of a nail (sorry, card). Annoying, frustrating, yes. But not a case for venting your spleen.

Notes — make them copiously as reminders to yourself and as records for those yet to be employed in the DP department. A few lines of info in the documentation or even better, comments in the program, can create instant dawns in the night of non-comprehension.

Stick to your guns when time-scale and panics are not reasonable. As the last in the line before runtime any hiccups, delays, etc tend to accumulate in the programming schedule. Co-operation within the DP department is essential, but don't make the programmer carry the burdens of the world.

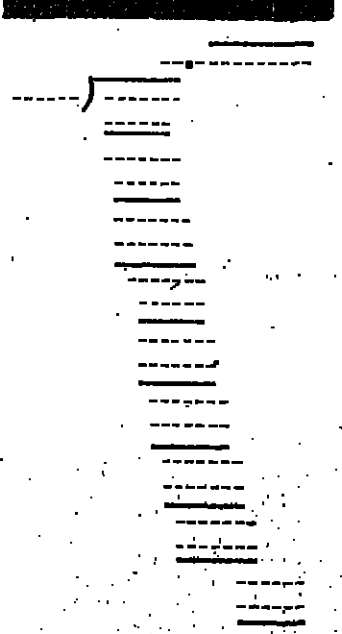
HAPPY 1981

Problem solving department

TO end the old year, an easy recommendation of problem solving — gentle on your mind.

You're sitting happy with a stack of four floppies of different sizes balanced on a spike, large one

Puzzler



THIS MAMMOTH skeletal division sum contains no clues at all in regard to actual numbers identified, but there is a nine-digit recurring decimal in the quotient (marked here by the horizontal line), commencing one digit away from the decimal point. So the first thing to do is ponder on those characteristics which are common to all fractions producing recurring decimals.

If you think the right thoughts, the divisor will be less difficult to find than might at first be imagined.

See page 17 for solution.

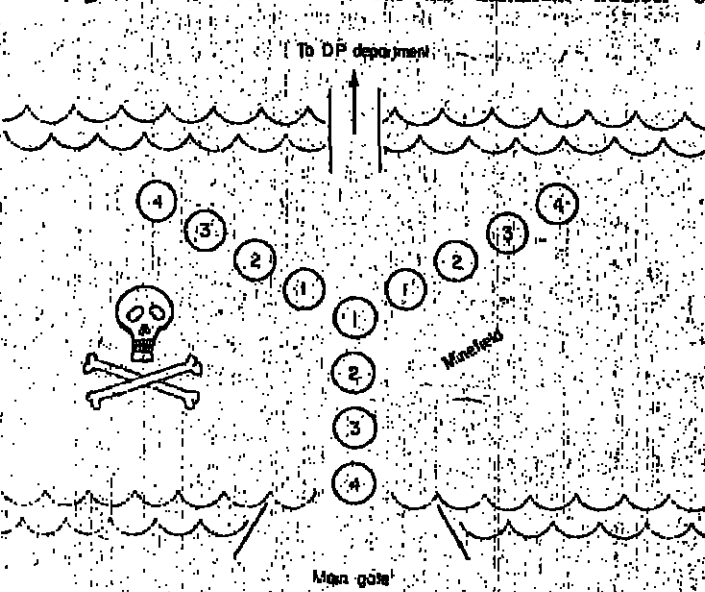


Fig 1. The Y-shaped pathway gives safe conduct through the minefield from the main gate to the DP department.

by Pamela Rowe

A quiet message in store for the shoplifter

SHOPLIFTING in the run-up to Christmas has been a cause for concern both for the overtempted or confused shopper and the struggling retailer. Now an American company claims to have found an answer in the shape of the Black Box, also known as the Mark VI Audio Subliminal Processor. This whispers, subliminally below the muzak, messages like "I am honest. I will not steal." When this is broadcast 3,000 times an hour across the store, it will, says its originator, Dr Hal C. Becker, reduce shoplifting.

Dr Becker's company, Behavioural Engineering, is in the business of altering human behaviour, voluntarily or the other way. Many psychologists, though, dismiss the whole idea, and there has been a continuing controversy over the rather inconclusive evidence, since the idea was first mooted 20 years ago.

Guide

Dr Becker is convinced, however, that his products do work and the theory behind them is sound. "The messages produced by the Black Box for example, can be used to guide human behaviour."

The Box uses digital speech synthesis circuit boards designed and programmed by Telesensory Systems, a privately-owned Calif-

ornian company. The messages are formed by digital speech produced from encoded data. Actual speech is encoded, compressed and stored in ROM until required, when a synthesizer chip expands and reconstructs the data, converting it to an analogue signal to drive a speaker. A multiplier adjusts the volume to a flicker below the background music. The messages are inaudible — but only just.

Ethics

Telesensory can program the Box for a variety of uses. One interesting possibility is a subliminal "My job is important," aimed at office workers everywhere to make them work harder. Other installations may be in medical or dental clinics, banks, or travel agents (you will fly Pan-Am). It may also help in the traumas of giving up smoking or losing weight.

A group of researchers from Stanford University and SRI International founded Telesensory in 1970. Its first ventures were into high technology aids for the blind and mute, then six months ago the speech synthesis division was formed. Now the company relies on US government money to support some of its R&D work.

The ethics of subliminal broadcasting have come in for a lot of discussion. To date there is little in the way of laws or regulations gov-

erning how messages should be used. Becker concedes that once the Box is installed he has no control over its use. "The critical controls are not available to the front panel, but one could get into it and change the setting — it's not a bank vault."

Robert Ellis Smith, publisher of a newsletter on privacy in the computer age, believes that Becker's products are clearly open to abuse. "It's questionable if its dominant use could be called benign. Probably not."

Becker says that his company will only sell the Black Box to "good" customers, which means, he says, no religious or political groups.

Powerful

But who defines "good"? And if it is a question of programming people rather than machines, shouldn't they at least be aware of it? Becker believes that notices displayed to the public where subliminal messages are used, will cover the case. If he is right and his products do work, they will certainly be a powerful tool — or weapon — in hands united by the law. At the moment this is all talk in place in America, but things have a way of crossing the water.

Seems quite a contradiction to the current mood of consumer protection.

by Paul Fisher

OP SPOT

Now's the time to . . . stay put!

THINGS ain't what they used to be. Until recently everything to do with computers, with the exception of micros, was growing like Topeka. But the year's end has seen the routine optimism of many computer people tempered by an unfamiliar circumspection.

A trusty register of the health of any marketplace is the rate at which jobs change hands, and this has slowed considerably over the past few months. Computer staff add those who profit by their moving around, have all noticed the difference.

Squeezed

One now tend to hang on to their jobs because there aren't the opportunities to hop from one site to another. There simply isn't the volume of job ads that appeared a year ago.

It's the same story for the recruitment agencies. VLI is one of the largest private recruitment agencies in the country and its marketing director and co-founder, Anthony Lambie, readily acknowledges: "We're being squeezed."

At the beginning of the year Co-Operators, the operators' branch of VLI, had 130 contractors placed in work, ranging from data prep to ops management. There are now 115, and this is the first half in growth since Co-Operators' formation in 1974.

Lambie reports that "business has been hit during the last three months but he's busy with plans for the New Year."

body shopping, leaving long-term recruitment to VLI's regional subsidiaries. But from January 1 all operator recruitment, both permanent and temporary, is being merged into one group.

Current wages for temporary work start at £140 for an ordinary op putting in a 40-hour week and up to £240 for a JCL writer. Roger Haylock of Co-Operators says: "We can't get enough JCL writers because nobody has bothered to train them." He regards JCL writers as operators as they are involved with production work.

Weekly rates for permanent staff start at £120 and a shift leader with four years' experience could expect to earn between £9,000 and £10,000 a year. The high demand here is for network control staff.

(Consultancies generally have no set policy when a client wants to put a contractor on the payroll. Lambie, for one, is anxious to

stress that this is not a move which his own company resists, because future goodwill is worth more to business prospects than muddying wells with legal hassles. It's all a matter of negotiating a placement fee.

Lambie reckons that 1981 will be a difficult year but doesn't anticipate any mergers between the larger agencies. He thinks that some of the smaller outfits could go to the wall and says: "Two people can run a successful agency but when business is difficult, the small firms get a decreasing proportion of what is available because they have less marketing clout."

25% down

The internal amalgamation of permanent and temporary operator placement work is being promoted by VLI as a better ser-

Take care with your emotions

I WAS happy to receive a free copy of Auerbach Publications' Data Center Dialog, Volume 3, Number 6, has some universally applicable advice for ops managers which Op Spot will hand on completely free of charge.

Halfway through the newsletter, after a section entitled Infusing New Blood Into the Data Center, is the heading When to Use Emotions. "The goal of the DCOM (Data Center Operations Management) should be to 'display emotion' only when it is appropriate," it says.

So, if you're checked off ops manager don't walk round with a baby grin on your face. Having

kept "hostility to a minimum" and having mastered the tricky techniques of face control, you can "use emotion to produce positive results."

You can also read on and take Steps for Decreasing Tension. The mind boggles, but this is achieved without artificial stimulation of any kind because the ops manager simply has to "ensure the data center is run as efficiently as possible."

Fingers

The longest and most helpful section grapples with the problem of finger pointing. "An age-old

problem," it says, "in which all parties involved in a problem situation try to shift the blame."

"What is to be done?" "The first step must be to stop the finger pointing." If your ops manager starts stepping on your fingers, you'll know why; but management should be warned that button pushing with the elbows and nose produces hazardous results.

We obviously must resolve to relax, organise and stop pointing with one or two fingers.

And as it's the time for resolutions, could the publishers spell "centre" and "dialogue" in English?

Perming the hair style

DON'T tell all your secrets to your hairdresser. Next time, confide in a computer.

A Norwich hairdresser, the Brian Robert salon, has just installed a system to ask clients 20 questions on the state of their hair and what they want done with it. On the basis of this it displays a graphic computer head on the VDU showing the stylist how to achieve the desired effect, and prints out advice on products, dilutions and hair-care.

Partners in the salon, Brian Seaman and Robert Smith, say that customers are very happy with the computer. "They are reassured by the scientific data — it's not just one stylist's opinion."

Asked if it was possible to fool the machine, Seaman said that if silly information was fed in, the computer halted and asked if you really wanted to carry on. If so, it flashed out an "advised not to proceed" message.

The installation was launched by Coldwell International which also supplied the existing program for perms and tints. Eventually the system will cover all types of hair treatment and be extended to look after the business side of the salon.



Partner Robert Smith measures the thickness of a client's hair to complete a perm program on the computer.

Magnuson looks at North-East

A DECISION on whether to build Magnuson mainframes at a 27,000 square foot plant in Washington, Tyne and Wear, is expected from the main board shortly.

If the go-ahead is given Magnuson expects to start production in September 1981 and the plant could also be used for repairs to European users' kit and micro-code programming.

The initiatives taken by Newcastle University in DP are a major reason behind the choice of Washington, but the exact number of jobs to be created will depend on demand.

Meanwhile Magnuson recently added a new model to the top end of its IBM-compatible M80 family. Dubbed the M80/44, it matches the performance of the IBM 4341 Group 2 while costing £60,000 less, the company says.

Volume shipments of the 44 are not scheduled to begin until the third quarter of 1981, the same time as the start of 4341 Group 2 deliveries, but customers can order an existing Magnuson model now on 60-day delivery and field upgrade to the 44 during 1981.

One of the advantages over the 4341 Group 2 underlined by Magnuson is that the 44's main memory can be expanded in one megabyte increments to 16 megabytes while the Group 2 user is limited to choosing between two, four and eight megabytes.

The number of channels on the 44 can be increased from six to 16 and two of them offer the three-megabyte data rate needed to support the IBM 3370 and 3375 disc drives and their controller, the 3880.

The 44 supports DOS/VSE, VSI, MVS/SP and VM, the same operating systems as the 4341 Group 2. It can also run systems not supported by the IBM machines — DOS, DOS/VSE and all releases of VSI and VM/370.

The 44 outperforms the IBM 4341 Group 1 by between 1.5 and 1.7 times compared with ratings of 1.3 and 1.1 assigned to the existing M80/43 and 42 models. Magnuson quotes £160,000 for a 44 with six channels and two megabytes.

The seminar's contact is Judith Fletcher, Keen Computers, 5 The Poultry, Market Square, Nottingham NG1 2HW. Tel: 0602 583254.

Unix takes the stage

TWO speakers from Bell Laboratories and a consultant from Conyx are prime attractions at a seminar on Unix to be held at Nottingham University on January 5.

Discussions will centre on using the time-sharing operating system on 16-bit micros. Developed by Bell Laboratories in 1971, the system is already popular on 32-bit minicomputers.

According to the seminar organisers, the one-day event should interest universities contemplating or already running courses on Unix and for actual and potential commercial users.

The seminar's contact is Judith Fletcher, Keen Computers, 5 The Poultry, Market Square, Nottingham NG1 2HW. Tel: 0602 583254.

Job-creating system

A SYSTEM that is expected to go live in summer could create more jobs at the supply depots of the Northern Clubs Federation Brewery.

The £300,000 system will be based on an ICL 2903 and 2904 which are being installed currently at the brewery's Newcastle headquarters.

High spots of the system will be suites for plant maintenance and telephone sales. The latter application will be based on 11 video terminals, four at head office and one each at the Brewery's seven UK depots.

Covenary depot manager Bill Moir said that the projected expansion plans could add more workers to his depot's existing 20-strong workforce.

Northern Clubs Federation Brewery was formed in 1919 and sells to working men's clubs primarily, but began nationwide distribution this year. Its processing is done at present by a bureau and the brewery plans to telephone sales, purchasing stock control wages applications to the new system.

Viewdata software for Univac V77

PRIVATE viewdata software to run on Univac V77 series minis has been developed by London-based DTA Computer Systems, a systems house specialising in real time applications.

Univac is to market the system, which is priced from £14,000 for a 16-port 10,000-page version based on a V77/200 and is expandable to a 1,000-port system based on four V77/200s plugged into a V77/800.

Protocols have also been developed for the mini to front-end ICL, IBM or Burroughs mainframes.

No billing or statistical facilities are offered on the system, but its

strong point is said to be its response time, with the possibility of a V77/200 responding in less than one second to all of its full complement of 256 ports when they are each requesting data every 10 seconds.

DTA's Dennis Thomas said that the queuing time depended only on how much buffer memory was allocated to data transfers. Although he had seen many large real time systems that had not worked because their designers had not understood the problems, it was surprising how much could be accomplished with just a little knowledge of queuing theory.

The Camden staff are using the Pet to find dealers who advertise for sale in the classified columns of newspapers, without stating whether they are dealers or private individuals: an offence under the Fair Trading Act. A buyer has more rights when purchasing from a dealer than he has buying privately.

All telephone numbers

The system is written in the assembly language for Univac minis to run under the RTM real time monitor, and it can make use of the Pronto database access system which runs under the Vortex main operating system on the V77/800.

But it could be made available to run on other makes of machine, Thomas said, and alternative distribution arrangements are being investigated.

Enhancements being developed include working with autodiallers and auto-answer terminals, for applications involving automatic collection and distribution of information.

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All telephone numbers

Pet tracks down shady car dealers

DISHONEST car dealers in North London are being tracked down with the aid of a Commodore Pet personal computer, originally installed at Camden Consumer Affairs Service to work out Weights and Measures calculations. This is one of several applications for the Pet, though up by trading standards officers in about 20 different local authorities.

The machine is also used for working out consumer credit table problems, although the Pet's main task is to handle the statistical calculations relating to the law on the contents of packages, which has become more complicated.

MORE OF EVERYTHING AT...

The West Centre Hotel, Lillie Road, Fulham, London April 1-3, 1981



SO SUCCESSFUL was the 1980 Peripherals Suppliers' Exhibition, that the organisers have had to make it bigger in every way for 1981.

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Our client is a well-known software house based in Hertfordshire and are located within easy reach of North London, Watford, Luton and the M1.

The current hardware consists of IBM System 34 computers plus a range of mini computers. The main area of activity revolves around first-time users. Application areas are extremely varied and successful applicants can expect a diverse and rewarding career path. The areas of involvement are the development of RPG II systems but other project areas include Basic + and Cobol.

If you have upward of 18 months' experience of either RPG II, COBOL or BASIC + and you have had systems experience albeit limited, then the company concerned would like to see you. You should have the ability to communicate at all levels and have clients liaison capabilities.

In addition to an above-average salary the company can offer 4 weeks' holidays, car expense account and car-parking facilities.

M.4388

ASSEMBLER PROGRAMMERS

Central London to £10,000

A very successful business in the publishing industry requires Assembler programmers to complete its small and friendly team.

The current hardware consists of a 380/50 working under DOS and GRASP but this is expected to be upgraded in the New Year to a 4331 using DOS/VSE.

Successful applicants will be expected to familiarise themselves with current applications but will principally be involved in new work.

The company is engaged in the mailing of company products, the maintenance and updating of their mailing lists, the continuation and enhancement of their accounting routines with complete services to the publishing industry.

Their requirement is for IBM Assembler programmers who have the necessary experience to undertake projects with the minimum of supervision and candidates who fulfil this requirement may have as little as 18 months using Assembler.

Salary will be based on experience. The company also offer 4 weeks' annual leave and season-ticket loans.

D.4895

SENIOR ANALYST/PROGRAMMERS

Borehamwood Negotiable

This company is soundly established and extremely successful in the area of selling and support of mini and microcomputers, particularly in the commercial, first-time user market-place.

There are three positions available of which two will be for the support team covering the general London area and one covering Herts. and East Anglia.

Applicants for these posts must possess a good working knowledge of basic accounting applications and will have controlled at least one major project accounting applications and will have controlled at least one major project where supervision of a support team was necessary. Proof of ability to liaise and effectively deal with clients and the associated areas one would expect with project control will be an advantage.

The successful applicants will join a fast growing company which offers excellent career development opportunities with all necessary additional training.

The company package includes a very competitive salary, car allowance, expenses, annual bonus, 20 days' holiday per annum, free life insurance and pensions schemes.

R/4897

PROGRAMMERS ANALYST/PROGRAMMERS

City £6-£10,000

Several banks and finance houses in the City of London are looking for Programmers, Senior Programmers and Analyst/Programmers as follows:

INTERNATIONAL BANK (West Central), operating twin POP II, seek experienced staff at all levels for development of systems in the New Year. Applicants should either have considerable AIMS experience or alternatively exposure to BANKING SYSTEMS in a company using BASIC +, BASIC + 2 or COBOL.

COMMODITY BROKERS (East Central) offer ground floor opportunities in a new POP installation for top-quality BASIC + 2 programmers and analyst/programmers. A purpose-built suite is being prepared and conditions of employment will be superb.

MERCHANT BANK (East Central) seek a programmer to supplement their existing team. A large POP installation running under AIMS provides a good opportunity for young, lively programmers who must be able to demonstrate AIMS or BANKING APPLICATIONS experience. Each of the companies mentioned provide very good employment packages which include RESTAURANT FACILITIES, LOW-INTEREST LOANS and either MORTGAGE SUBSIDY or BONUS.

R4816/20

SENIOR ANALYST/PROGRAMMER

London, City to £12,000

This well-known merchant bank are based in the city of London and are well served by public transport. They have recently taken delivery of an IBM System 34 computer which will serve all areas of the bank's activities. The person appointed will work initially on his or her own and liaise direct with the user departments to identify exact requirements, feasibility studies will include financial modelling and investment management. It is expected that the first phase of development will last at least one year.

The ideal person will have considerable experience as an analyst/programmer using RPG II, he or she will also be able to show a mature approach and possess the ability to liaise with users at all levels.

The bank offers a considerable employment package as one would expect from a leading merchant bank and further details on this position are available by ringing Datascene quoting Ref. M/4972.

PROGRAMMERS/SENIOR PROGRAMMERS

Surrey HP 3000 £6.5-£10,000

Two internationally-known companies based in SURREY have vacancies for COBOL programmers ideally with HEWLETT-PACKARD experience. Some exposure to DATABASE is preferred and it is essential that applicants have a minimum of two-years' experience gained in a COMMERCIAL environment. Typically, those interested should have worked on Mini-based application areas such as ORDER ENTRY, INVENTORY CONTROL AND FINANCIAL LEDGER SYSTEMS. Work at both sites is of a DEVELOPMENT nature and excellent opportunities for CAREER development and ADVANCEMENT exist for successful applicants. SENIOR programmers should be able to demonstrate around four years' experience which must include recent supervisory responsibilities. Systems analysis experience, though not essential, would be a decided advantage. A wide range of company benefits are available including either restaurant facilities or luncheon vouchers, health care schemes and in one case a flex-time working plan. Relocation expenses may also be reimbursed where appropriate.

D.4790

PROGRAMMER/ANALYST

West Sussex to £7,000 + review

Our client specialises in clerical and financial routines for specialised industries.

The current hardware comprised in ICL 2904 operating under George II.

Applicants, who should have a minimum of 2 1/2 years' COBOL programming on ICL 1900 or 2903/4 machines and who should also have a knowledge of ICL software, will have the advantage of working closely with and understanding the systems analyst. Experience of analysis work would therefore be an asset.

A negotiable salary of up to £7,000 is offered which is dependent upon experience but which is subject to review in April, 1981.

In addition the company offers a comprehensive benefits package which includes advantageous house-purchase facilities, a generous holiday allowance, sick pay scheme, company pension fund and a subsidised restaurant.

Flexitime is used within the basic 35-hour week, above which overtime is paid at favourable rates.

D.4844

ANALYST

Hampshire c. £7,500

A leading name in a wide variety of electronic engine controls, fuel gauge systems and ancillary controls require an analyst to complete their small team.

The current hardware consisting of a 1900 machine is to be upgraded to an ME29 which is still to be installed.

A complete package of both financial and manufacturing systems has been running successfully for some time and the analyst will join the team at a time when existing programs have to be converted and the next phase of development begins. This will cover the introduction of on-line working and the establishment of a totally integrated accounting system.

The successful candidate will probably have 2 years' experience in the preparation of specifications although less would be accepted for any suitably qualified candidate. Experience of Sales Order Processing would be an advantage.

In addition to the basic salary the company offers a pension scheme, a subsidised restaurant and profit-related bonus.

D.4837

Datascene International Limited,
Sceptre House,
169-173 Regent Street,
London W1R 7FB, Telex: 25851.

01-439 7871

24 hour answer phone

THORBAR

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CONSULTANT

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- CAR ALLOWANCE

PROGRAMMER

c.£9,000 PER ANNUM
- CAR ALLOWANCE

IF YOUR BACKGROUND AND EXPERIENCE RELATE TO THE FOLLOWING REQUIREMENTS, CALL OR WRITE TO US NOW TO ARRANGE AN EARLY INTERVIEW

1. A strong IBM background with sound knowledge of working with Database and CICS software.
2. Experience associated with the design and/or implementation of Word Processing Hardware/Software although not essential, will prove highly attractive.
3. The ability to work well with all levels of user management and other personnel.
4. The desire to be associated with development in an environment able to utilise technical skills to the full.

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2. Programming background having used CORAL, ALGOL or PASCAL.
3. Currently working for a mini computer manufacturer or Software House in a similar role.
4. Self-motivated with the ability to undertake total project responsibility without supervision.

1. CORAL, ALGOL or PASCAL programming background.
2. Experience from working with technical projects incorporating Real-time/on-line applications based upon mini computer hardware.
3. The ability to develop and progress your career within a technically orientated environment.

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Excellent "KIT".

Applicants
Real salesman Commercial Systems knowledge, able to take over existing productive territories in shortest possible time.

R20 Engineers — £ Neg.

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Company
Data Communications market leader. Exciting products dynamic growth patterns.

Applicants
25-35, minimum 2 years' sales experience. Able to sell to Communications Design Engineers. Will consider outstanding commercial experience.

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THE UNIVERSITY OF SUSSEX

PROGRAMMER

(Male/Female)

Graduate Programmer required in the Computing Centre for an initial period of two years to join the team of programmers implementing management information systems for the computing service.

The University is replacing its ICL 1904E system, during 1981, with a linked system of three large Digital VAX 11/780 computers, and this post has been created to assist in providing transition systems, and setting-up the user services for our new computing service.

The appointment will be made on the Civil Service scale 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

Further details and application forms can be obtained from the Staff Records and Recruitment Officer, Sussex House, University of Sussex, Falmer, Brighton, BN1 9QJ, or telephone Brighton (01273) 808750, Ext. 433.

Closing date: Monday, January 19, 1981.

RESEARCH FELLOW

Break new ground. Opportunity for higher degree work. A three-year development programme in computer-aided learning for disabled patients in the Department of Endocrinology, Charing Cross Hospital calls for a graduate with computing qualifications, preferably with background in education or health.

Starting salary £5,714 including London weighting. Further details from Medical Personnel Officer, Brackenbury House, 116 Fulham Palace Road, London W6 7TJ. Tel: 01-748 2040. Ext: 2903. Closing date: 6th February, 1981.

REF: E1/0101

MYRIAD

SYSTEMS ANALYST

C. LONDON £8,000 to £11,000

An outstanding opportunity exists for a Systems Analyst to join the development group of a highly successful international organisation, with its headquarters located in Central London.

The group is responsible for the development of an interesting and varied range of new systems for the investment trusts and bonds aspect of the company's operations throughout the U.K. and Europe, providing vital business information to more than 180 users. An extensive communications network links the users, facilitating rapid interchange of information and providing each location with remote processing facilities.

This is a first-class opportunity for Analysts seeking a career move to gain valuable experience together with the opportunity for project leadership in a dynamic organisation.

Prospects for future career progression are excellent providing scope for individual development, and our client envisages a high starting salary together with excellent fringe benefits.

REF: E1/0101

MYRIAD APPOINTMENTS LIMITED

30 Fleet St London EC4Y 1AA Tel 01-353-0981 24 hrs

CONSULTANTS ANALYSTS PROGRAMMERS

Croydon
London/City

Salaries to £15k

We have been retained by our client, a major international Services Company to help recruit a number of key people at all levels to fill vacancies at their London offices.

All positions require at least 2 years' practical experience of Systems and Programming work. Candidates should have a prime interest in developing systems and solving business problems.

Flexibility is vital as our client mixes programming, systems work and consultancy, therefore using each person's skills to the full.

Successful candidates are expected to participate fully in the development of the company, and as all promotions are from within, candidates should be positively career conscious.

Excellent salaries and attractive benefits are offered by this fast-growing company which include: Share Purchase Scheme; Free Medical Insurance, Free Life Assurance, Free Pension, Profit-Sharing Scheme, Relocation Assistance, as well as influence in company policies.

CW 1/1

SENIOR PROGRAMMER

Dublin £8,000-£10,000

An established international manufacturing company on the north side of the city requires a competent Programmer who has the ability to advance quickly.

Expertise in RPG II is the main requirement. However, experience of interactive systems, the manufacturing process or database techniques would be helpful for the career that is envisaged for the successful candidates.

Our client will pay a top salary for the right candidate, together with other excellent benefits.

CW 1/2

Analyst Programmers & PROJECT LEADERS

London Based to £11,000

A London-based European Systems House is seeking Analyst/Programmers and Project Leaders for their diverse operations in the UK, Germany and Holland.

Their business is mainly based on technical projects in the prime industries: Plant Process Control, Designing Minicomputers for the North Sea Oil/Petro Chemical Industry; Laboratory Automation; Mechanical Handling; Medical Systems and H.E.P. equipment are examples of their projects.

Our client is interested in candidates who have real-time mini computer experience and have worked on the following software:

DEC	Data General
Honeywell	Intel
Ferranti	Philips

Familiarity with PDP RSX11 is an added advantage, and a knowledge of several high-level languages including ASSEMBLER is necessary for these positions.

Competitive salaries plus generous benefits are offered which includes: Profit Sharing Schemes, Free PPP Medical Insurance, Relocation Assistance, and for the more senior people, a car is also included in this package.

CW 1/5

SENIOR SYSTEMS ANALYST SYSTEMS ANALYST/ PROGRAMMER

Dublin
Senior Systems Analyst
£10,500-£11,500 + Bonus
**Systems Analyst/
Programmer**
£9,000-£10,000 + Bonus

Our client, a market leader with a turnover of just under £100m, requires additional Data Processing personnel for major developments over the next 4-5 years.

The Senior Systems Analyst will report to the S & P Manager and the successful candidate must have at least 3 years' commercial systems experience and be able to develop new systems from scratch.

The successful Systems Analyst/Programmer will be responsible for specifying detailed systems designs from business specifications and be involved in all phases including programming and implementation. At least 3 years' systems design, plus programming in ICL COBOL is required. Progression to full Systems Analyst is assured.

CW 1/6

SYSTEMS ANALYSTS ANALYST PROGRAMMERS PROGRAMMERS

Middlesex

An international computer company wishes to recruit a number of staff from all levels to help design, produce and market their electronic Data Processing systems.

Our client's marketing and service organisations cover over 25 countries with emphasis on the USA and Europe. Manufacturing is carried out in Ireland and Germany for the European markets. Research and development play a major role in the European network.

Systems Analysts with 3 years' commercial systems and design experience are required. Knowledge of COBOL and BASIC is necessary and candidates should be capable of working in a sales environment. You will probably be involved in manufacturing or be employed with a Software House.

Analyst/Programmers and Programmers with 2/3 years' programming and systems experience in BASIC and COBOL are also needed.

If you are interested in working for this highly motivated multinational company, and would like to earn an excellent salary, coupled with the usual generous benefits associated with an organisation of this type, we would like you to contact us.

CW 1/7

SYSTEMS DESIGNERS PROJECT LEADERS

North Hertfordshire

We wish to recruit on behalf of an international design and manufacturing company — a market leader in the Process Control Industry.

Our client develops computer systems using their own hardware and software products built around PDP-11 processors. A real opportunity exists for Systems Designers and Project Leaders to develop packages and products.

Candidates should have the ability either to project teams or design software systems.

If you have been working in: Multi-Tasking; Data Communication Systems; CPU buses and peripherals or Automation Systems, we should like to hear from you. Excellent salaries and generous relocation assistance are offered plus the usual benefits associated with a company of such high standing.

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Telephone: 01-834 7105, Telex: 918582

DUBLIN: Canberra House, 24 Lower Leeson Street
Dublin 2
Telephone: (0001) 789577

CSA Computing
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CW 1/3

PROGRAMMER SYSTEMS/ ANALYST

Dublin £8,500 +
Mortgage Assistance

A leading financial institution in Ireland is installing an IBM 4341 in 1981. To complete the development team Programmer/Analysts are required.

Candidates with 5 years in Data Processing are needed, of which at least two should have been using Assembler language, preferably IBM. Additional training in new techniques will be given.

Besides an excellent salary and low cost mortgage, other benefits in this package include a generous pension scheme.

CW 1/4

S/34 RPG II PROGRAMMER/ ANALYSTS IN CONSULTANCY

Dublin £7,000-£10,000

Our client is a major Irish accounting and management consultancy practice, employing over 550 people and providing a comprehensive range of professional services to Irish and international companies.

You will be required to work on a variety of Business systems being developed on RPG II for outside clients.

If you have at least 18 months' experience of RPG II, our client will be very interested but if you have 3 years' plus, they will still want you and will pay more! IBM System 34 experience is of particular interest.

Successful candidates will be offered a position in line with their experience and a future working to high professional standards in a company committed to individual programs for training and development.

CW 1/8

SOFTWARE INNOVATION CONSULTANTS AND PROGRAMMERS

Holland Salary up to 90,000 Guilders

A market leader in design and implementation of software systems in data communications wish to expand their Project Team.

Specialising in commercial, industrial and banking systems, a number of positions are available from Analyst Programmers to Senior Consultants.

In addition to a degree background, it is important to have had experience of data communications software using mini computers.

Major projects actively engaged upon include real-time (process orientated) systems switching and data transport network.

The Company offers in addition to a substantial salary, 1 full overseas relocation expenses, 2 holiday bonus, 3 resettlement advance, 4 initial accommodation allowance for you and your family, 5 assistance with house purchase, 6 medical attention scheme, etc.

You can also expect to visit our client in Holland prior to final contract.

CW 1/8

CONSULTANTS

West London Based

Our client wishes to recruit an experienced Consultant to work in its first-class Bureau Services.

The successful applicant would be working in a small department which holds total responsibility for the company's user support division.

All our client ask from you is wide IBM MVS experience and the ability to deal with a large business system. The chosen candidates would be involved with all the Sales, Support Management and Marketing for this large Services organisation as well as being familiar with a consultancy and managerial role.

The successful candidate will be offered an above-average salary with the following additional benefits: Pension Scheme, BUPA, Sports/Social and Subsidised Meals.

If you would like to have interesting and varied work within this fast-moving company and be guaranteed excellent career prospects, please contact us.

CW 1/10

2011/10/10

New Year — New Jobs

'Demand is still there for good people in 1981'



Les Clark

Les Clark is manager of recruitment services with Knight Programming Support. Although he has reservations about the immediate future he says he is "bullish".

PAUL FISHER: Can you tell me what has happened in your business this year and give me your thoughts on the immediate future?
LES CLARK: I would say that the contract market, which is basically Knight's strength, has been fairly flat for most of this year. In the Christmas run up period, we experienced a lot of activity and we are anticipating a mini-boom on the contract side in the New Year.
PF: Starting from January?
LC: Yes. We've got dozens of companies looking to take on contract people in the New Year. What tends to happen is that financial years end on December 31 or March 31. The companies have to work within their budgets but when they get their new allocations — especially some of the American companies — away you go as they open up new projects.

Overseas
PF: Has the recession made much difference to you?
LC: Yes, we've felt the draught like everybody else. In terms of Knight Programming we have an advantage

that many people out in the marketplace don't have. We can change. During a recession we focus our attention on the sectors of the market which aren't being affected so much. We can go for growth areas overseas and we've opened a New York office this year. To some extent our overseas offices are a hedge against recession although the strength of the pound has hit us. Half of Knight Programming's turnover is from outside the UK.
PF: Is that 50% of placements?
LC: No, I'm talking about total group turnover. Placements are 90% UK, I would say.
PF: Do you see contracting as having a healthy long-term future?
LC: There will always be a demand for contractors in certain specific situations. If you have a conversion from, say a 1900 to a 4300 you will need a lot of basic manpower over a six to eight months period. Conversations are a prime target for our contract marketing. Other areas are databases and the highly technical parts of computing.
PF: Has contracting changed?

LC: It isn't pioneering any more. We've got contractors who have been with us for seven years. We keep rolling them round and can offer them almost as much security as they would have had if they'd been in a full-time job.
Risk factor
PF: Do you offer pension facilities?
LC: No, we don't. We're looking at a health insurance scheme.
PF: And holidays?
LC: No, we don't give holidays. That's the nature of the game. Contractors are earning a premium over the permanent market rates and the risk factor of being out of work is part of that.
PF: What about your permanent placements?
LC: The permanent side is the less substantial of Knight Programming's activities and only accounts for 10% of our turnover. Taking our 1980 year to date sales compared to our 1979 year to date sales we have a 30% increase on permanent placements.
Looking to 1981, I would see that trend continuing. We've opened up a regional

office in Birmingham because there is a lot of business up there.
Our regional developments have helped to contribute to the increase in permanent sales.
PF: Are there any particularly sick bits of the market?
LC: I would say operations is a sick bit of the market. The permanent market, I suppose, can be split between operations on the one hand and systems and programming on the other.
Optimistic
The operational market is dying and although we make a living, I don't see it taking any significant upturn.
PF: Is that due to the recession or to technical changes?
LC: Both. In terms of 1981, I wouldn't anticipate any extra mileage in the operational side of the business.
PF: And programming?
LC: On the programming side, I would be cautiously optimistic. We've got a lot of vacancies. If 500 of the right people walked into this London office today we could place them. We could place 100 people through our Man-

chester office and 100 through Birmingham.
There's always a market for good people who, for instance, know about CICS, IMS and DLL. In a recession, we gear ourselves up to possibilities at the more senior end of the market and there is still a lot of activity at that end. We put in a recent ad for a data processing manager and had over one hundred good replies.
PF: What about school-leavers?
LC: The market for school leavers is a very cruel one. It is unsympathetic to TOPs course trainees.
PF: Why is that?
LC: We are an agent and obviously fulfil our client's requirements. If our clients want trainees, they are falling off the trees so they don't need to use us.
Responsible
PF: Where do you think the responsibility for training lies? Is it with the schools, the companies, the agencies possibly?
LC: When times are hard, people tend to regard training

as an expendable overhead. Schools are more aware of computing now and a lot of curricula contain computing studies.
PF: Would you like schools looking to the marketplace and saying, for instance, that Cobol programmers are needed?
LC: They do and nobody wants to take them. I've interviewed TOPs people who are mature and dying for a job, but nobody gives them a chance. They're away once they get a couple of years' experience. I don't see any softening in that situation in 1981.
PF: Does everybody you place have experience?
LC: Yes. On the contract side, we won't touch people until they've had about four years' experience. If we're putting out contractors to clients, they would demand from us that they've got certain levels of experience.
PF: Are wages still rising?
LC: Yes. I would expect that trend to continue at around 20%.
PF: Do you predict any mergers within the agency business during the next year?

LC: Mergers? I don't know. Our rates have increased over 100% in a 12-month period and we can't pass all of that to our customers. So, agencies in general are having a particularly bad time.
PF: So are you sitting around biding your nails?
LC: Not at all. I'm bullish. We've increased our sales and profits every year since our formation in 1970 and expect that trend to continue. I think the demand for programming people is still there.
It's a suppressed demand because financial problems have called a halt to many development projects. But people have still got projects on, they still want to develop online systems and do this and do that.
As soon as the New Year comes and things relax, the demand will still be there for good people.

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- ★ Two years-plus Assembler programming experience working in a data communications environment
- ★ Experience in designing and implementing software for Mainframe and/or minicomputer hardware
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- ★ Budgetary Responsibility for a Segment of Corporate Development.
- ★ Telecommunications, Message Switching, Word Processing, Personal Computing.
- ★ Experience of Major Systems Development as an Analyst or Project Leader.
- ★ Banking or financial experience useful, but not essential.

Ref: DJ 80201

CHIEF TECHNICAL PROGRAMMER Watford c. £11½K

- ★ Good IBM background.
- ★ Probably will have CICS Experience.
- ★ To act as Internal Consultant to Project Teams
- ★ Multi-National Company.

Ref: DJ 80202

MVS SYSTEMS PROGRAMMER NW10/Middx. Border to £13K

- ★ To Quickly Take Over Department.
- ★ Must have MVS Sys. Gen. Experience.
- ★ Preferably with CICS/NCP/VTAM experience.
- ★ Good Company + Benefits.

Ref: DJ 80203

COBOL PROGRAMMER London Totally Negotiable + Bank Perks

- ★ COBOL Programmers, Circa 2 years' experience.
- ★ To work on Development of Banking Systems.
- ★ Hopefully CICS Experience, but not essential.

Ref: DJ 80204

COBOL PROGRAMMERS Sevenoaks to £7250

- ★ To Train in CICS/DLI.
- ★ Circa 2 years' COBOL Experience.
- ★ Good Opportunity For Friendly Person.

Ref: DJ 80205

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- ★ Preferably experience of PDPs or Micros.
- ★ Excellent Company, Perks and Prospects.

Ref: DJ 80206

DOS/VS SYSTEMS PROGRAMMER London and Essex Pounds Very Negotiable

- ★ DOS/VS Systems Generation Experience.
- ★ Must have Assembler.
- ★ Preferably with CICS.

Ref: DJ 80207

SENIOR ANALYST/PROGRAMMER Central Middlesex to £10K

- ★ Preferably COBOL IBM DOS/VS Experience.
- ★ 2 years' Involvement in Analysis.
- ★ Mostly Analysis Work, leading to Project Management.

Ref: DJ 80208

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1. 5 years' general computing with 2-3 years' experience in systems analysis and programming for Data General Computers.
 2. 3 years' in Real-Time process control.
 3. Experience of Pert evaluation and software quality assurance.
- Preference will be given to applicants with experience in modern telecommunication systems and the offshore oil industry.
- EDG Engineering International Limited is an established and important engineering design and management consultancy with global connections in the oil, gas and general process industries. Contract terms offered by the Company will be attractive and will reflect the seniority and responsibility attaching to proposed post.

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For all positions we offer an attractive tax-free salary, free furnished housing and regular leave with paid air transportation for your whole family.
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Required to both support existing facilities (e.g. MVS/SE RL2, JES2, TSO, IMS, TCAM, VTAM, NCP) and to help develop and implement new facilities including 3033 Systems Extensions, MVS/SP Products and IMS extended facilities.

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The rate of technological change both apparent now and in the foreseeable future necessitates the provision of additional senior technically and business orientated personnel to assist in planning for a future comprising Distributed Data Processing, Electronic Office Systems and Plant Automation.

If you consider that your experience and ability qualifies you to fulfil one of these positions then our Client's senior staff will be available to discuss details directly with you at our offices on:-

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Call in for an informal discussion with our Client or telephone Roger Carr for an application form.

Blackwood Associates
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Applications are invited for two Chairs in the Department of Computer Science.

The other chairs in the Department are held by Professor D. B. G. Edwards (ICI Chair of Computer Engineering), Professor F. H. Sumner (Barclay Chair in Microprocessor Applications in Industry) and Professor D. Morris (Chair of Computer Programming).

Consideration will be given to candidates with an industrial or academic background but they must be active currently in research in any field of Computer Science.

Some possible fields of interest follow but the list is not intended to be exclusive or to imply any order of priority.

Artificial Intelligence, Commercial Data Processing, Computer Aided Design, Computer Architecture, Computer Networks, Robotics, Theoretical Computer Science.

Applications (2 copies, 1 suitable for photocopying) giving full details of qualifications, experience, research etc., and the names and addresses of three persons to whom reference may be made, should be sent by January 14th, 1981, to The Registrar, The University, Manchester M13 9PL from whom further particulars may be obtained. Quote Ref. 243/80/CN.

(0832)

TENDERS WEST SUSSEX COUNTY COUNCIL SUPPLY OF DATA PREPARATION EQUIPMENT

Notice is hereby given that the West Sussex County Council wish to receive Tenders for the supply of Data Preparation Equipment.

Their appropriate Tender Forms, together with copies of Conditions of Contract and a specification may be obtained on application to Head of Computing Services, County Treasurer's Department, County Hall, Chichester, West Sussex.

The County Council do not bind themselves to accept the lowest or any Tender received.

All Tenders should be submitted on the above mentioned Tender Form and should be delivered to the County Secretary at County Hall, Chichester, West Sussex, in a plain sealed envelope by post or on or before 12 noon on 28th January, 1981. Nothing should appear on the outside of the envelope which would indicate the name of the sender.

(0880)

BOX Nos.

Box number replies should be addressed to

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c/o Computer Weekly
Barnet House
Stanford Street
London E6 5LH

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or any of the following attributes:

Experience in design and production of 'Multi-tasked' 'real-time' software for time critical control applications. The testing and debugging of such software in a 'live' (real-time) environment, distributed processing (with Micros). A knowledge of: one or preferably more assembly languages, one or more 'real-time' high level languages (e.g., RTL/2, CORAL etc.), the ability to think at 'whole' system level, computer H/W mechanisms e.g. Interrupts, DMA, I/O etc. at an architectural level, plus an appreciation of the various 'state of the art' micros.

He/She will be expected to liaise with the H/W design team and, in time, to assist and instruct the more junior members of the S/W team.

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KLM have chosen the Travicom 2 System for use throughout Holland. Other airlines and telecommunications authorities are about to do so for their countries.

If you are an experienced programmer or software engineer familiar with any of the following

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The general requirement is for candidates who are educated to degree level in either Electronics, Physics or Computer Science with post-graduate experience in either data-communications technology, digital electronics or micro-processor application.

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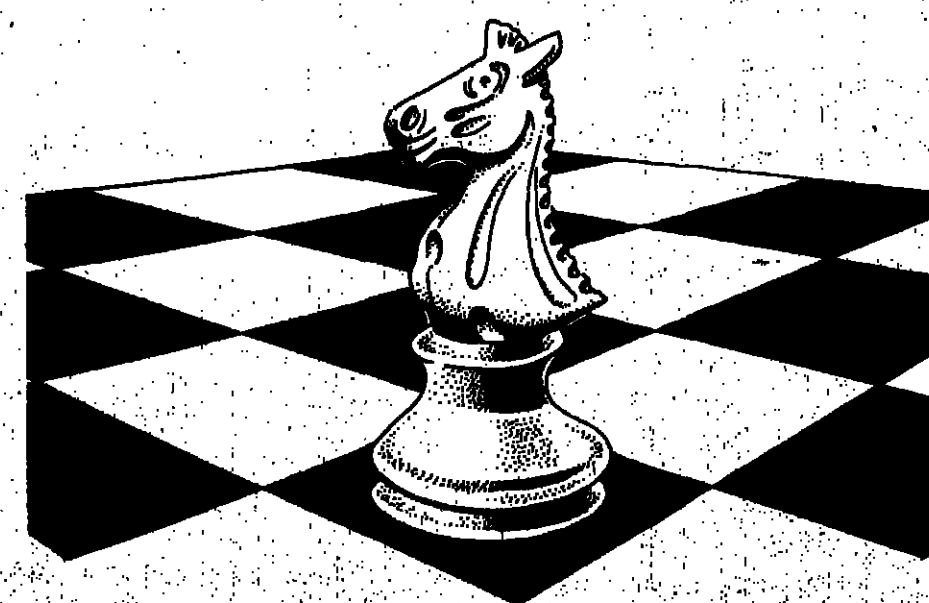
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They use twin IBM 3032 processors and have a network of 300 terminals including distributed processing supported by IBM 3730's and 8100's.

But whatever your equipment or language background, our client's major commitment to training will ensure that you will be brought right up to date on IBM equipment, and stay there.

The company will pay you an excellent starting salary of up to £9,500 p.a. together with other benefits. If you need to move house, there is a choice of attractive and affordable properties with easy reach and relocation assistance will be provided.

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COMPANY NEWS

ICL's results caused shock waves in the City. KEVIN CAHILL explains why they were mis-read.

ICL blamed for City 'overreaction'

THE most depressing aspect of ICL's results was the City's reaction. One shareholder ditched half a million shares on the day the results were announced. The subsequent fall in the share price from 108p before the results to 70p afterwards reduced the market valuation by ICL by over 30%.

This reaction, or "overreaction" as some industry commentators see it, has been laid squarely at the door of ICL by some City analysts.

Shock

Graham Meek of stockbrokers Wood Mackenzie, a leading ICL watcher in the City, described the figures as "poor" and the explanations as "inconclusive".

He was kind. Other City sources expressed outright shock at the results, and annoyance at the fact that the warnings given by ICL in November had not been clear enough to indicate the extent of the trouble.

How much further ICL could have gone by way of disclosure without breaking the rules is hard to know, but what is certain is that the City understands ICL less well than it should.

At least some of the blame for this must attach to ICL. For instance, not much is known about the balance inside the company between software and hardware. The whole emphasis of chairman Philip

Chappell's presentation was on the hardware side of the business, with only a passing mention for software and services.

Yet managing director Chris Wilson, when he spoke at the BCS earlier in the year, revealed that manufacturing accounted for less than one-third of the company's resources.

This approach to the balance of the company's business has left the City with only the hardware data and the figures to respond to. This must be accounted unsatisfactory given that service revenue, including software turnover, has risen from £270 million to £300 million.

And the news on the hardware side, on the surface (which is how ICL gave it) was not good. Sales to ICL's own leasing subsidiaries went up 100% from £86 million last year to £150 million this year.

In the long run this should mean more money for ICL, provided the leases are on a sufficiently long period and the repurchase component is low. ICL says that most are for four or five years with minimal repurchase obligations. But short-term profit figures will be affected.

ICL did not give a breakdown of the hardware sales but a spokesman later emphasised that the "postponement" of orders was occurring at the lower and upper ends of the range. Only the ME29 was ahead of target by about 20%, with orders outstanding worth

about £70 million.

The end of the range must likely to have borne the brunt of the hardware sales slowdown in the large 2960 and above.

The effect will be significant. The upper end of the 2900 range is expensive to build, expensive to support, and each unit could be tying up as much as £2 million in working capital, at an effective interest rate of about 16%.

ICL has never sold much of the 2900 series in America where its sales were nearly halved last year, but in places like Australia and Germany it has sold big machines and it is in these two countries that ICL is encountering Fujitsu head-on, and by all accounts suffering.

This must raise the question of whether ICL should continue with its large mainframes at all. A spokesman at ICL agreed that the trend in sales before the recession struck was "towards the lower end of the range." However painful the surgery at Winsford and Dukinfield may have been, therefore, more may have to follow if ICL is not to discover, as it comes out of the recession, that it still does not recover sales at the top end as a result of Japanese competition.

In terms of sales ICL had a boom year in what it describes as Africa, which in practice means South Africa, for an estimated 80% of this business. Here again, ICL may be caught out if the widely expected trade embargo is imposed next year.

Fears

The huge loss sustained by the Lloyd's insurance market has made the City sensitive to figures relating to repurchases from leases, and the fact that ICL increased its provision for repurchase from £7.8 million last year, to £19.1 million this year, caused concern.

This is more than the doubling of sales to the leasing companies would normally account for, but is still in accordance with the caution



ICL chairman Philip Chappell... only a passing mention for software and services.

ICL has exercised in this area over the years, according to a spokesman.

One City analyst expressed concern that ICL might be filling warehouses with repurchased machines and might have to face the kind of write-off announced by Burroughs last week.

ICL told Computer Weekly that its provision for repurchase was conservative and that ICL's experience indicated that the machines coming back to ICL were outright purchases originally and are being taken back at discounts on new equipment, that are decidedly low.

Pricing on the ME29 has been particularly aggressive, with the majority of purchasers offered no discount on the return of equipment. Leeds University has been offered little more than £4,000 for a working 1906.

If the value of its shares means anything to ICL, it should concentrate in the immediate future on explaining itself to the City, rather than selling itself.

With over £300 million worth of revenue coming from services and software and a runaway success

Turnover static for NCR UK

LITTLE if any growth in turnover is expected for NCR's UK company for the year just ended, despite a good return in the terminal and non-computer banking sector.

Board director Sean Dixon-Child says there will be "no significant difference" in turnover for the year ended November 30, 1980 compared with the previous year.

The turnover last year was £82.4 million giving a profit of £9.1 million. UK turnover including hardware sales, various support, engineering and other services, the Dundee factory and a small contribution from Commonweath countries like Cyprus, Tanzania and Kenya.

The expected lack of growth this year is put down by one City analyst to falling cost of hardware and is not unexpected. NCR in Britain is primarily a hardware company, with only an arm's length relationship to allied software sales through other companies.

Five a week

This year's expected setback comes at the end of a period in which the company's sales of cash dispensers, cheque encoders, sorters and the like to the banking sector have held up well, according to Dixon-Child.

NCR supplies cash dispensers to the Midland, National Westminster and Barclays Banks (Lloyds), the other big clearing bank, being supplied by IBM).

NCR is aiming to install NCR dispensers at the rate of about five a week in 1981.

Dixon-Child says NCR aimed to sell 5,000 dispensers by 1985 but that it had already sold 1,000. There are currently about 7,000 branches of the four big banks, so NCR is aiming for the major part of this market.

It also anticipates similar business in the building society sector and is developing a dispenser which will take the pass book issued to society savers.

The societies view the pass book as essential both to attract and retain savers.

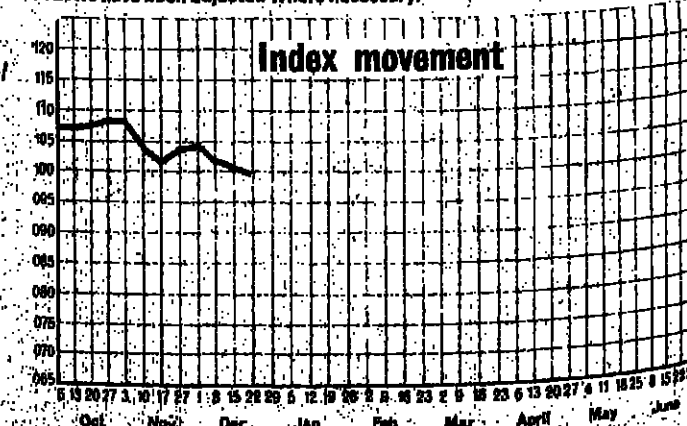
Fascia success

SALES of the RTZ Fascia financial software package have passed the £1,000,000 mark. The package is designed to maintain a company's fixed assets on the new current cost accounting basis. It is sold outright, and now has over 160 users.

CW SHARES TABLE

London Stock Exchange				US Stocks			
Price	Change	Price	Change	Price	Change	Price	Change
1980		1980		1980		1980	
High	Low	High	Low	High	Low	High	Low
122	121	122	121	122	121	122	121
121	120	121	120	121	120	121	120
120	119	120	119	120	119	120	119
119	118	119	118	119	118	119	118
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115	114	115	114	115	114	115	114
114	113	114	113	114	113	114	113
113	112	113	112	113	112	113	112
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106	105	106	105	106	105	106	105
105	104	105	104	105	104	105	104
104	103	104	103	104	103	104	103
103	102	103	102	103	102	103	102
102	101	102	101	102	101	102	101
101	100	101	100	101	100	101	100
100	99	100	99	100	99	100	99
99	98	99	98	99	98	99	98
98	97	98	97	98	97	98	97
97	96	97	96	97	96	97	96
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93	92	93	92	93	92	93	92
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58	57	58	57	58	57	58	57
57	56	57	56	57	56	57	56
56	55	56	55	56	55	56	55
55	54	55	54	55	54	55	54
54	53	54	53	54	53	54	53
53	52	53	52	53	52	53	52
52	51	52	51	52	51	52	51
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48	47	48	47	48	47	48	47
47	46	47	46	47	46	47	46
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20	19	20	19	20	19	20	19
19	18	19	18	19	18	19	18
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9	8	9	8	9	8	9	8
8	7	8	7	8	7	8	7
7	6	7	6	7	6	7	6
6	5	6	5	6	5	6	5
5	4	5	4	5	4	5	4
4	3	4	3	4	3	4	3
3	2	3	2	3	2	3	2
2	1	2	1	2	1	2	1
1	0	1	0	1	0	1	0

The table shows the closing prices in London on Friday and in America on Wednesday. The share index is based on the prices of the UK companies in the table. High and Low have been adjusted where necessary.



Determination of entity sub-types

Section I - Part 12

of our series describing a system design methodology

by Rosemary Rock-Evans

ONE of the difficulties encountered in entity analysis is that of knowing at what level to pitch the fixing of an entity type.

An entity type was defined as being "all the entities relevant to the enterprise which fit a given description." When deciding on the entity type, it is often difficult to decide which groupings of entities to consider.

A person for example might be classified as one of the entities within an entity type "Person," "Doctor" or "Surgeon."

The total population of entities can always be split into identifiable subtypes. In the first stages of entity analysis, this task is performed intuitively by knowing what the enterprise regards as important and how it classifies the total population.

In many cases, however, this classification is not made clear by the enterprise, different users will view the entities in different ways, and guidelines are required.

Entity sub-types are mutually exclusive groups of entities within the one entity type, eg if the entity type is Person, sub-types might be Male or Female, Married or Not Married.

Entity sub-types may be permanent conditions or modes of existence which are fixed over time, and event-independent, eg an entity type may be an oak, an elm, an ash, etc; an automobile may be a bus, a car, or a lorry; a building may be a hospital, a clinic or an operating theatre.

Alternatively, the sub-types may describe impermanent conditions which are event-dependent, eg a person may be an employee or not an employee, married or not married, a child, an adult or a retired adult.

Entity sub-types and the recording of the sub-types have four important uses:

PEOPLE and EVENTS

New chair at Queen Mary College London

SENIOR research consultant Professor John Hiffe, visiting professor at Queen Mary College, London University, has been appointed to the new chair of information systems science and technology at the college.

Prof Hiffe, who works for ICL, will be responsible for the development of an integrated curriculum, covering the design and construction of information processing systems at all the relevant hardware and software levels.

The chair will be in the Department of Computer Science and Statistics which plans, with the Department of Electrical and Electronic Engineering, to offer in the near future, a four-year degree programme in the field of computer systems technology.

Before that, starting in October

1981, the Department will be running a degree programme in computer systems with microelectronics.

Educated at the City of London School, Prof Hiffe read mathematics at Cambridge. He entered the computer industry in 1956 and ran IBM's first computer service bureau in London. While working for ICL he and one of his research teams developed the concepts of the Distributed Array Processor, which carries out very high-speed calculations.

Prof Hiffe has been associated with Queen Mary College since 1976, during which time he has developed a new undergraduate course in advanced computing design, and has continued his research into computer architecture.

In charge of printers launch

John Ing has been appointed by Peric International to be responsible for the launch of its range of serial printers, throughout Europe, Africa and the Indian subcontinent. He joined the company as district sales manager, having previously been product marketing manager with Documentation.

Barry McTernan has joined GMS Computing as head of consultancy. He joins from Coopers and Lybrand Associates.

Bob Cardwell has joined the Daniel Triunier Consultancy and its related organisation, the Senior Computer Contracts Register, as senior partner, with responsibilities in the insurance and finance sectors. He was previously with IBM UK for 12 years, and head of management services with a major Lloyd's broker.

Derek Fay, formerly a director of Consultant Systems, has been appointed sales director at Tempairon. Another newcomer to the company is Rex Cragg, who takes on corporate project manager from the Financial Times, where he worked as corporate planning and projects executive. Two of the company's senior engineering staff have been promoted. Peter Bowen, formerly technical manager, is now applications manager, and Charles Toogood, previously senior electronic engineer, becomes engineering manager.

David Lyons will be director of Input's European field service programme. He was previously engineering services marketing manager.

Richard Musial has been appointed data processing manager at Swift Chemicals Company. He was formerly systems manager for Presicold.

Peter Corke has joined Hamlin Electronics as sales engineer. He was previously with Mann Components.



Graham Hallett has joined Lowndes-Ajax Computer Services as a director. He will take responsibility for the launch of new ventures in the UK. Since 1977 he has been managing director of Weller, the specialist IBM small systems company.

DIARY

JANUARY 6
Micrographics. IDPM Birmingham branch. Saracen's Head, Stratford Road, Shirley. 7.30.

JANUARY 13
Protection For Software. BCS Merseyside branch, Faculty of Science Lecture Theatre, Liverpool University. 6.00.

JANUARY 13
The Local Computer Scene. Past, Present and Future. IDPM Hull branch. Hull Crest Hotel, Ferryhill Road, North Ferry, North Humberside. 7.15.

JANUARY 13
Artificial Intelligence - Voice Recognition. IDPM Essex branch. County Hotel, Chelmsford. 8.00.



Harris Information Systems International Division has made five senior sales appointments. They are (left to right): Clive Boon, Bill Williams, Allen Currier, Mike Thatcher and George Hood-Leader. Seated is UK general manager Frank Walters.

Micro Scope adds to staff

FOUR new appointments have been made at Micro Scope as part of the company's expansion plan.

Peter Lloyd will be responsible for the company's commercial consultancy. He has been involved in processor and operating system design for 10 years, with three computer manufacturers. Before joining Micro Scope he was with Logica and Artwood Computer Systems.

Consultant/project manager is

Geoffrey Johnston has been appointed Simplan support manager at Peter Merrick Associates. He was previously with SSI International. Barry Mitchell joins the company from Data 100. He will be working as system manager for Time-Slot.

Nigel Roberts has been appointed business development manager, marketing management information systems at GSI UK. He was formerly statistician and systems analyst with ICL. Datskil's advanced systems sector.

Simon Wright, who joins from Inter Europe Software Design. He was previously with Adler Business Systems as an analyst/programmer.

Sandra Williams has joined the company as an analyst/programmer, having previously worked as a systems engineer at Racal. Debbie Ness becomes junior programmer, after completing an HND in computing at the Central London Polytechnic.

Ray Cook has joined Unilever Computer Services Ltd (UCSL) as systems manager for the Southern Region. He has been in the computer industry for 17 years, and his previous employers have included Plessey and the Rank Organisation.

Gillian Heath has been appointed sales executive at Sigma Electronics Systems. She previously worked for Marconi Space and Defence Systems as systems engineer, and later gained experience in sales and support with Elcotech.

BETA re-elects its president for 1981

CHAIRMAN of the Frank Wilson group of companies, Bryan Wilson, has been re-elected president of the Business Equipment Trade Association for the second successive year.

BETA represents the interests of manufacturers and sole concessionaires of all types of business machines and systems, computers and associated peripheral equipment in the UK.

In his acceptance speech, Wilson called for a single integrated voice, data and image communications network in British Telecom. He also criticised the high price that industry pays for energy in the UK, saying that he failed to understand how the present government, as a champion of freedom and private enterprise, could indulge in de-

liberately manipulating the price of gas for non-commercial reasons.

Wilson's involvement with the association began in 1950, when he became executive representative of his family company, Frank Wilson Filing Ltd. The company was established in 1908, and has offices in London and Southport.

He was re-elected to the council five years ago and made vice-president in 1978. He was also honorary treasurer from 1976 to 1979.

Brian Gifford of Nexos UK and Larry Lewis of Mailing and Mechanisation were elected vice-presidents of the association. The two other vice-presidents, Dennis Blackwell of ICL and Rex Howell of Dymo Business Systems were re-elected.

Dave Ware and Edwin Monger have been appointed to the board at Dicoil Electronics. Ware is the company's sales director, formerly sales manager. Monger was company secretary and is now financial director.

David Carlton has been promoted from financial controller to financial director at the Racal-Redac group. He joined the company in 1979.

Steve Doig has joined Wilkes-PCA Data Supplies to run sales and marketing operations for the Wolverhampton and Warrington Online Stores. He joined the Wilkes group in 1978.

Ian Powers has moved from Motorola Semiconductors to develop all network and firmware products at Zyner in Uxbridge.

Mark Rawling has joined Prime as a software consultant, dealing mainly with the Ministry of Defence and national research establishments. He previously spent three years with the Ford Motor Company as a systems analyst. Joining Rawling as a software consultant is John Makolski, who formerly worked for AFV Company Ltd, and Calcomp. A third new appointment at Prime is that of Mary Cullen, an associate analyst who joins from ICL.

Michael Roberts has been appointed to lead the sales team at Jenson Computer Systems of Bristol. He is a member of the Scottish Institute of Chartered Accountants and the Institute of Marketing. He previously worked for Girdwin Warren Engineering as a marketing director.

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NEWS IN BRIEF

Deadlines met online

WOLVERHAMPTON'S Express and Star evening newspaper is the first daily publication to introduce an online news gathering service with the agreement of the unions. The introduction means reporters can transmit stories rather than phoning them in - a saving of 10 minutes per story on average.

From Tuesday December 16, journalists sat at Delta Data 2100 VDUs and transmitted their copy to a PDP-11/70.

IBM scores

LIVERPOOL University has gone to IBM rather than ICL for a machine to relieve the workload on its ICL 1906 mainframe. The four-megabyte IBM 4341 on order will support 1200 megabytes of Memorex disc storage and 40 Memorex 1377 display terminals. It will service more than 60 simultaneous terminal users.

Two Pi takeover

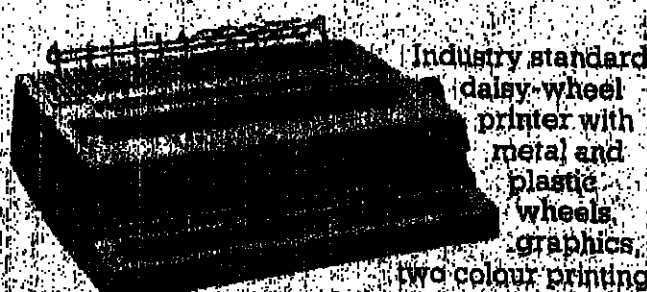
IBM-compatible minicomputer builder, Two Pi, is to be bought by Four-Phase Systems of Cupertino, California. Four-Phase is the firm whose distributed processing kit is built and sold under licence in Europe by Philips, the existing Two Pi parent company.

Apple windfall

APPLE Computer Inc finally placed their shares on the over-the-counter market in New York on December 12. Five million shares were offered to the public at \$22 each. By the end of the first day's trading the shares had reached \$29. This gave Apple a market capitalisation of \$1.56 billion, and made the two founders of the company, Steve Jobs and Steve Wozniak, worth together more than \$700 million.

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Council preferred DEC to local firm

LEEDS-BASED Systime has been at the centre of a major controversy in West Yorkshire. It was created by the County Council's decision to order two VAX machines worth nearly £600,000 from Digital Equipment rather than from the local systems supplier.

Systime chairman John Parkinson described the council's decision as "bloody crazy" and said that his company could have supplied the VAX machines at a lower price than DEC, with a

higher UK added value.

He thought that the council had made a fundamental mistake in opting for DEC's VMS operating system rather than for Systime's Systel.

Parkinson said that Systime had not been asked to tender for the contract. Then, after heavily publicised criticisms of the council's decision by people outside Systime itself (including local politicians and the Leeds Chamber of Commerce) engineering officers of the council questioned whether

Systime could handle the job.

The VAX machines will be used for structural and traffic engineering work at West Yorkshire's Wakefield head office, and John Parkinson pointed out that Systime could have supplied the necessary applications packages just as easily as DEC.

Parkinson described the attitude of the West Yorkshire engineering executive as "entrenched".

Council engineers agreed to meet with Systime a few days after DEC was given a letter of intent,



Parkinson... "It's crazy."

mainly because of the publicity surrounding the affair. But they subsequently advised the council to stand by its decision to buy from DEC.

Oil cash

● From front page

attempts to raise money with a rights issue. The City's reaction to the poor results was sharp and the revelations that the DoI have been actively seeking funds for the company has added to the pessimism about ICL.

The DoI's move seems to be part of a government strategy designed to steer ICL away from seeking public funds for its currently underfunded R&D program.

ICL's determination to maintain a product range which stretches from micros to mainframes implies that additional funds will be needed if the R&D is not to be starved. Additionally chairman Philip Chappell has stressed that conservation of cash is a priority for 1981.

Micro prizes

THE Scottish Industry/Education microelectronics working party is running a competition and offering cash prizes for microelectronic application projects in colleges throughout the country.

Brighton has a couple of microcomputer outlets. Tandy has a store that was doing well and an independent concern offers the PERT. However, there is no Apple dealer in Brighton, so as an authorised dealer, we hope to corner the market.

Xerox has chosen Holborn as site for its second London branch. Equipment covers the range from calculators to minicomputers and features suppliers like Apple, Hewlett-Packard and National Panasonic.

terest to solicitors, estate agents and travel agents as well as general accounting and production packages.

Computer Point is situated at Brigstowe, 5 Welsh Back, Bristol BS2 4SP.

Lion Microcomputers has opened its shop at 21 Bond Street, Brighton. It offers a wide hardware and software range, publications library, and a repair and maintenance service.

Executive director Andrew Margolis commented: "Currently,

Telecoms Council fails to gain support

THE Telecommunications Council has failed to gain the support of the main organisations it was set up to unite.

At its launch in November, a spokesman said he expected companies and users to be associated with the council through their trade associations and not through individual membership.

But the Business Equipment Trade Association, one of the mainstays of the new pressure group, this month withdrew its support. Council president Lord Morris said he had been opposed to this arrangement from the beginning.

It would have made the council "too remote from the issues," he said, and would have generated conflicts of interest in delegates between their employment and their various association memberships.

Other target organisations have decided against joining after initially expressing interest, including the Electrical Engineering Association, the Telecommunications Engineering and Manufacturing Association and the British Radio Equipment Manufacturers' Association.

The Telecommunications Managers' Association and two mobile radio associations are continuing their membership and Lord Morris said he was optimistic about individuals and companies joining.



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EEC lists objections to IBM practices

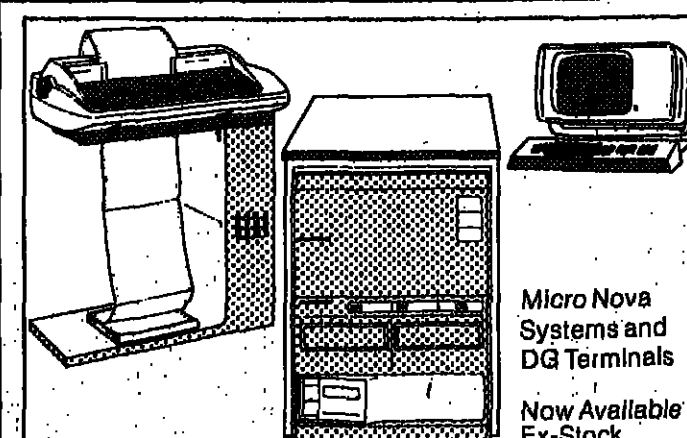
MORE than six years after the start of its investigations into IBM's business practices in Europe, the EEC has filed a "statement of objections" against the industry giant.

Among other demands, the EEC wants IBM to stop including a minimum amount of main memory in processor prices, to make more systems software freely available to plug compatible manufacturers, and to provide interface information earlier than at present. Memorex was the main complainant to the EEC over the latter issue.

IBM pointed out that some of the objections raised by the EEC were similar to those already dealt with in US litigation and resolved in IBM's favour. It was referring to the anti-trust suits by Memorex, Telex, Calcomp and Transmex. IBM said that it was confident that it "fully complied with the rules of the EEC".

IBM will now have to respond to the EEC complaints in the form of oral presentations before the Commission. If the EEC stands fast to its complaints, IBM could appeal to the European Court of Justice in Luxembourg, whose ruling would be final.

If IBM loses it could be fined as well as being forced to change its practice in the EEC.



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